



**Federal Energy
Regulatory
Commission**

**Office of
Energy Projects**

November 2010

Empire Pipeline, Inc.

Docket No. CP10-493-000

Tioga County Extension Project

Environmental Assessment



Cooperating Agencies

New York State Department of Agriculture and Markets

New York State Department of Environmental Conservation

U.S. Army Corps of Engineers

Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas 1
Empire Pipeline, Inc.
Tioga County Extension Project
Docket No. CP10-493-000

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) for the Tioga County Extension Project proposed by Empire Pipeline, Inc. (Empire) in the above-referenced docket. Empire requests authorization to construct and replace pipeline facilities to provide an additional natural gas capacity of 350,000 dekatherms per day from new producer interconnections in Pennsylvania to new interconnections on its pipeline system and on Tennessee Gas Pipeline Company's pipeline system in New York.

The EA assesses the potential environmental effects of the construction and operation of the Tioga County Extension Project in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA). The FERC staff concludes that approval of the proposed project, with appropriate mitigating measures, would not constitute a major federal action significantly affecting the quality of the human environment.

The New York State Department of Environmental Conservation, New York State Department of Agriculture and Markets, and the U.S. Army Corps of Engineers participated as cooperating agencies in the preparation of the EA. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by the proposal and generally participate in the NEPA analysis.

The proposed Tioga County Extension Project includes the following facilities:

- construction of approximately 14.9 miles of new 24-inch-diameter pipeline in Tioga County, Pennsylvania and Steuben County, New York;
- replacement of approximately 1.36 miles of existing 24-inch-diameter pipeline in Ontario County, New York;
- construction of a new interconnect with Tennessee Gas Pipeline Company in Ontario County, New York; and

- construction of miscellaneous pipeline modifications and appurtenant facilities at the existing Oakfield Compressor Station in Genessee County, New York.

The EA has been placed in the public files of the FERC and is available for public viewing on the FERC's website at www.ferc.gov using the eLibrary link. A limited number of copies of the EA are available for distribution and public inspection at:

Federal Energy Regulatory Commission
Public Reference Room
888 First Street NE, Room 2A
Washington, DC 20426
(202) 502-8371

Copies of the EA have been mailed to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; newspapers and libraries in the project area; and parties to this proceeding.

Any person wishing to comment on the EA may do so. Your comments should focus on the potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments, the more useful they will be. To ensure that your comments are properly recorded and considered prior to a Commission decision on the proposal, it is important that we receive your comments in Washington, DC on or before **December 20, 2010**.

For your convenience, there are three methods you can use to submit your comments to the Commission. In all instances, please reference the project docket number (CP10-493-000) with your submission. The Commission encourages electronic filing of comments and has dedicated eFiling expert staff available to assist you at 202-502-8258 or efiling@ferc.gov.

- (1) You may file your comments electronically by using the [eComment](#) feature, which is located on the Commission's website at www.ferc.gov under the link to [Documents and Filings](#). An eComment is an easy method for interested persons to submit brief, text-only comments on a project;
- (2) You may file your comments electronically by using the [eFiling](#) feature, which is located on the Commission's website at www.ferc.gov under the link to [Documents and Filings](#). With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "[eRegister](#)." You will be asked to select the type of filing you are making. A comment on a particular project is considered a "Comment on a Filing"; or

(3) You may file a paper copy of your comments at the following address:

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Although your comments will be considered by the Commission, simply filing comments will not serve to make the commentor a party to the proceeding. Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (18 CFR 385.214).¹ Only intervenors have the right to seek rehearing of the Commission's decision.

Affected landowners and parties with environmental concerns may be granted intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding which would not be adequately represented by any other parties. **You do not need intervenor status to have your comments considered.**

Additional information about the project is available from the Commission's Office of External Affairs, at **(866) 208-FERC** or on the FERC website (www.ferc.gov) using the eLibrary link. Click on the eLibrary link, click on "General Search" and enter the docket number excluding the last three digits in the Docket Number field (i.e., CP10-493). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659. The eLibrary link also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription which allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to www.ferc.gov/esubscribenow.htm.

Kimberly D. Bose,
Secretary

¹Interventions may also be filed electronically via the Internet in lieu of paper. See the previous discussion on filing comments electronically.

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ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
AI	Agricultural Inspector
AQCR	air quality control regions
ATWS	additional temporary workspace
CAA	Clean Air Act
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CH ₄	methane
Commission	Federal Energy Regulatory Commission
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
dB	decibels
dBA	decibels on the A-weighted scale
Dth/day	Dekatherms per day
EA	environmental assessment
EI	environmental inspector
Empire	Empire Pipeline, Inc.
EO	Executive Order
ERNS	Emergency Response Notification System
EPA	U.S. Environmental Protection Agency
ESCAMP	Erosion Sedimentation Control and Agricultural Mitigation Plan
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FWS	U.S. Fish and Wildlife Service
GHG	greenhouse gas
GWP	global warming potential
HCA	high-consequence area
HDD	horizontal directional drill
L _{dn}	day-night sound level
L _{eq}	24-hour equivalent sound level
LUST	leaking underground storage tank
M&R	meter and regulating
MAOP	maximum allowable operating pressure
MBTA	Migratory Bird Treaty Act of 1918
Memorandum	<i>Memorandum of Understanding on Natural Gas Transportation Facilities</i>
MLV	mainline valve
MP	milepost
NAAQS	National Ambient Air Quality Standards

NEPA	National Environmental Policy Act
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
N ₂ O	nitrous oxide
NO ₂	nitrogen dioxide
NOI	<i>Notice of Intent to Prepare an Environmental Assessment for the Proposed Tioga County Extension Project and Request for Comments on Environmental Issues</i>
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSA	noise-sensitive area
NYSDAM	New York State Department of Agriculture and Markets
NYSDEC	New York State Department of Environmental Conservation
NYSNHP	New York State Natural Heritage Program
O ₃	ozone
OEP	Office of Energy Projects
OPS	Office of Pipeline Safety
OTR	Ozone Transport Region
PACRR	Pennsylvania's Code of Rules and Regulations
PADEP	Pennsylvania Department of Environmental Protection
Pb	lead
PCB	polychlorinated biphenyl
PHMC	Pennsylvania Historical & Museum Commission
PHMSA	Pipeline and Hazardous Materials Safety Administration
Plan	<i>Upland Erosion Control, Revegetation, and Maintenance Plan</i>
PM ₁₀	particulate matter less than 10 microns in diameter
PM _{2.5}	particulate matter less than 2.5 microns in diameter
PNDI	Pennsylvania National Diversity Inventory
Procedures	<i>Wetland and Waterbody Construction and Mitigation Procedures</i>
Project	Tioga County Extension Project
psig	pounds per square inch gauge
RCRA	Resource Conservation and Recovery Act
RICE	reciprocating internal combustion engine
Secretary	Secretary of the Commission
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SPCC	Spill Prevention, Control and Countermeasure
SRBC	Susquehanna River Basin Commission
TEPPCO	Texas Eastern Products Pipeline Company
TGP	Tennessee Gas Pipeline Company

tpy	tons per year
USACE	U.S. Army Corps of Engineers
USDA-NRCS	U.S. Department of Agriculture – Natural Resources Conservation Service
USDOT	U.S. Department of Transportation
USGS	U. S. Geological Survey
UST	underground storage tank
VCP	Voluntary Cleanup Program
VOC	volatile organic compound

A. INTRODUCTION AND PROPOSED ACTION

1.0 INTRODUCTION

The staff of the Federal Energy Regulatory Commission (Commission or FERC) has prepared this environmental assessment (EA) to assess the potential environmental impacts of the natural gas pipeline facilities proposed by Empire Pipeline, Inc. (Empire). We¹ prepared this EA in compliance with the requirements of the National Environmental Policy Act (NEPA; Title 40 of the Code of Federal Regulations, Parts 1500-1508 [40 CFR 1500-1508]) and the Commission's implementing regulations under 18 CFR 380. The assessment of the environmental impacts is an important and integral part of the Commission's decision on whether to issue Empire a Certificate of Public Convenience and Necessity (Certificate) to construct and operate the proposed facilities. The U.S. Army Corps of Engineers (USACE), the New York State Department of Environmental Conservation (NYSDEC), and the New York State Department of Agriculture and Markets (NYSDAM) were cooperating agencies in the preparation of this EA.

On August 26, 2010, Empire filed an application for the Tioga County Extension Project (Project) with the Commission in Docket No. CP10-493-000, pursuant to Section 7(c) of the Natural Gas Act (NGA) and Part 157 of the Commission's regulations. Empire seeks a Certificate to construct a new natural gas pipeline and related facilities in various counties in Pennsylvania and New York.

2.0 PURPOSE AND NEED

Empire's application states that the proposed facilities would enable them to provide firm transportation services requested by two producers to deliver gas from Marcellus Shale production. The facilities would provide these producers with access to markets on the Millennium Pipeline in southern New York and the New York City metropolitan area, markets on the Tennessee Gas Pipeline Company (TGP) 200 Line in northern New York and New England, and markets in eastern Canada and the US northeast through Empire's interconnection with TransCanada Pipeline. In addition, these new abundant supplies would be made available to markets off the existing Empire system in western New York. The Project would create approximately 350,000 dekatherms per day (Dth/day) of capacity to these market areas. Empire's target date for placing the proposed facilities into service is September 1, 2011.

3.0 PUBLIC REVIEW AND COMMENT

On January 28, 2010, FERC granted Empire's request to utilize the pre-filing review process and assigned a pre-filing docket number (PF10-5-000). The purpose of the pre-filing process is to encourage the early involvement of interested stakeholders, facilitate interagency cooperation, and identify and resolve issues and concerns before an application is formally filed with the Commission.

Empire hosted open houses in Corning and Victor, New York on February 17 and 18, 2010, to inform stakeholders about the Project and provide an opportunity for stakeholders to ask questions and express

¹ "We," "us," and "our" refer to the environmental staff of the Office of Energy Projects.

their comments and concerns. Empire mailed a notification letter of the open houses to all affected landowners and local officials, and published an announcement in the local newspaper. Empire established a single point of contact at a toll-free telephone number, an e-mail address, and a publically-accessible project website containing information about the Project. Also, Empire sent letters to affected landowners informing them of its intent to file a Certificate application with the FERC.

On April 7, 2010, we issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Tioga County Extension Project and Request for Comments on Environmental Issues* (NOI). The NOI was sent to 327 entities, including affected landowners; federal, state and local officials; agency representatives; conservation organizations; Native American tribes; local libraries and newspapers; and other interested parties. The NOI provided a summary of the proposed Project, outlined our environmental review process, provided a list of the identified environmental issues, and requested comments on the scope of the analysis for the EA.

In response to the NOI, we received comment letters from the NYSDAM, NYSDEC, Pennsylvania Department of Environmental Protection (PADEP), USACE, and one individual. On April 27 and 28, 2010, we conducted two public scoping meetings in Corning and Victor, New York, respectively, to give the general public an opportunity to comment in person on environmental issues to be addressed in the EA. Scoping comments were in regard to Project planning, construction and restoration, monitoring and remediation, permitting, wetlands, special status species, and noise associated with the TGP Interconnect Meter Station. In addition to the public notice process described above, we consulted directly with federal and state agencies to identify issues that should be addressed in the EA. We led an agency meeting on April 28, 2010, with the NYSDEC, NYSDAM, and Steuben Soil & Water Conservation District. We also led a teleconference on June 16, 2010, with the USACE and U.S. Fish and Wildlife Service (FWS). Comments received during scoping are addressed in the applicable sections of the EA.

4.0 PROPOSED FACILITIES

Empire proposes to construct and operate a new natural gas pipeline and other facilities in New York and Pennsylvania. Figures 1, 2, and 3 show the general location of the Tioga County Extension Section, Lift and Lay Section, and the TGP Interconnect Meter Station. More detailed maps of the Project area are included in appendix A. The proposed facilities are summarized below.

- **Tioga County Extension Section:** Construction of approximately 14.90 miles of new 24-inch-diameter pipeline, from near State Line Road in Jackson Township, Tioga County, Pennsylvania, to a location adjacent to Empire's existing Corning Metering and Regulating (M&R) Station on College Avenue in the Town of Corning, Steuben County, New York. This section includes two producer interconnects and meter station at the southern terminus, piping and valving tie-in assemblies at the northern terminus, and associated valving and appurtenances.
- **Lift and Lay Section:** Replacement of approximately 1.36 miles of existing 24-inch-diameter pipeline in the Town of Victor, Ontario County, New York in order to increase its maximum allowable operating pressure (MAOP), associated valve and piping modifications on the west end of the pipe replacement section at Empire's existing Victor Pressure Control Station (Mainline Valve

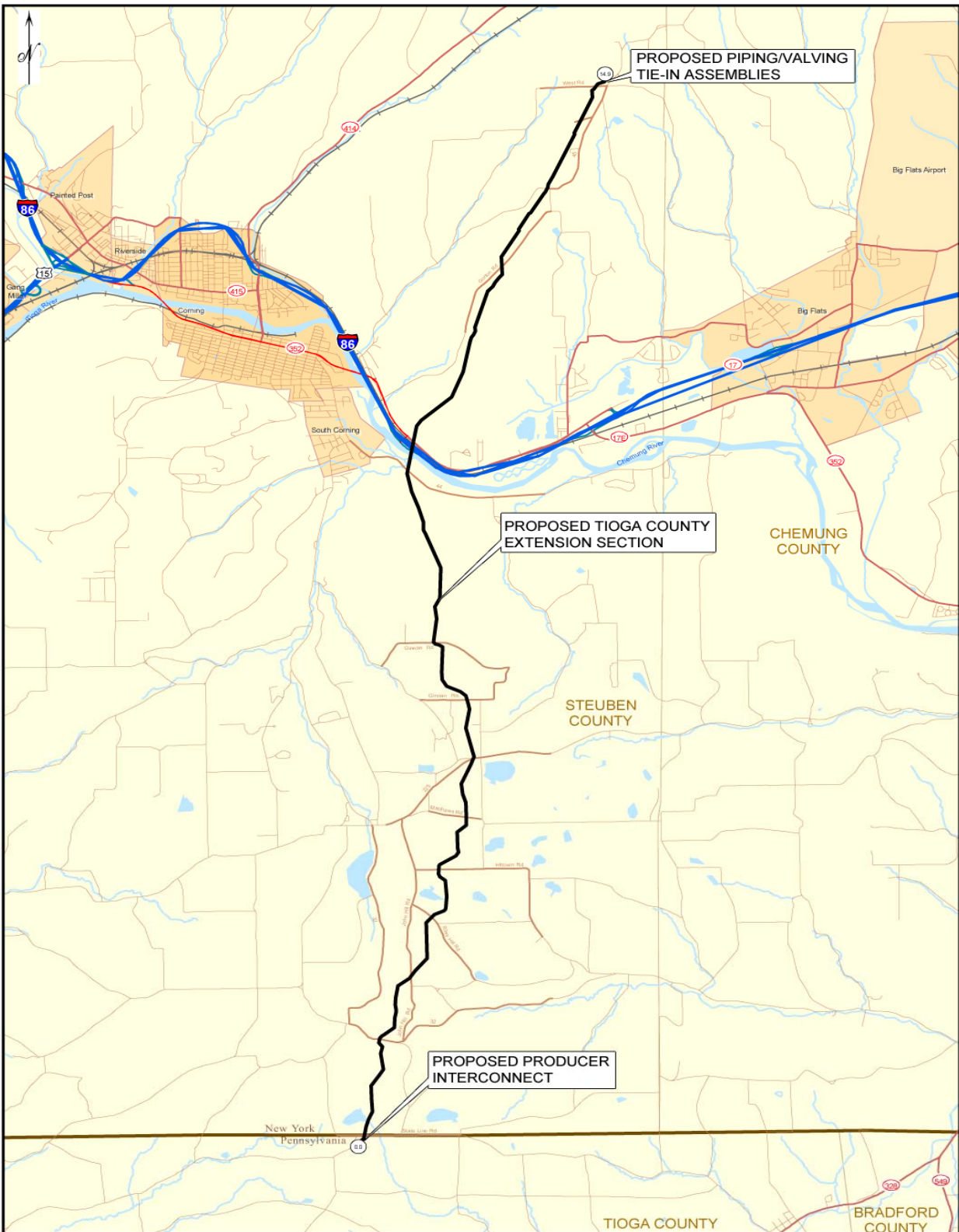


Figure 1: General Location of the Tioga County Extension Section

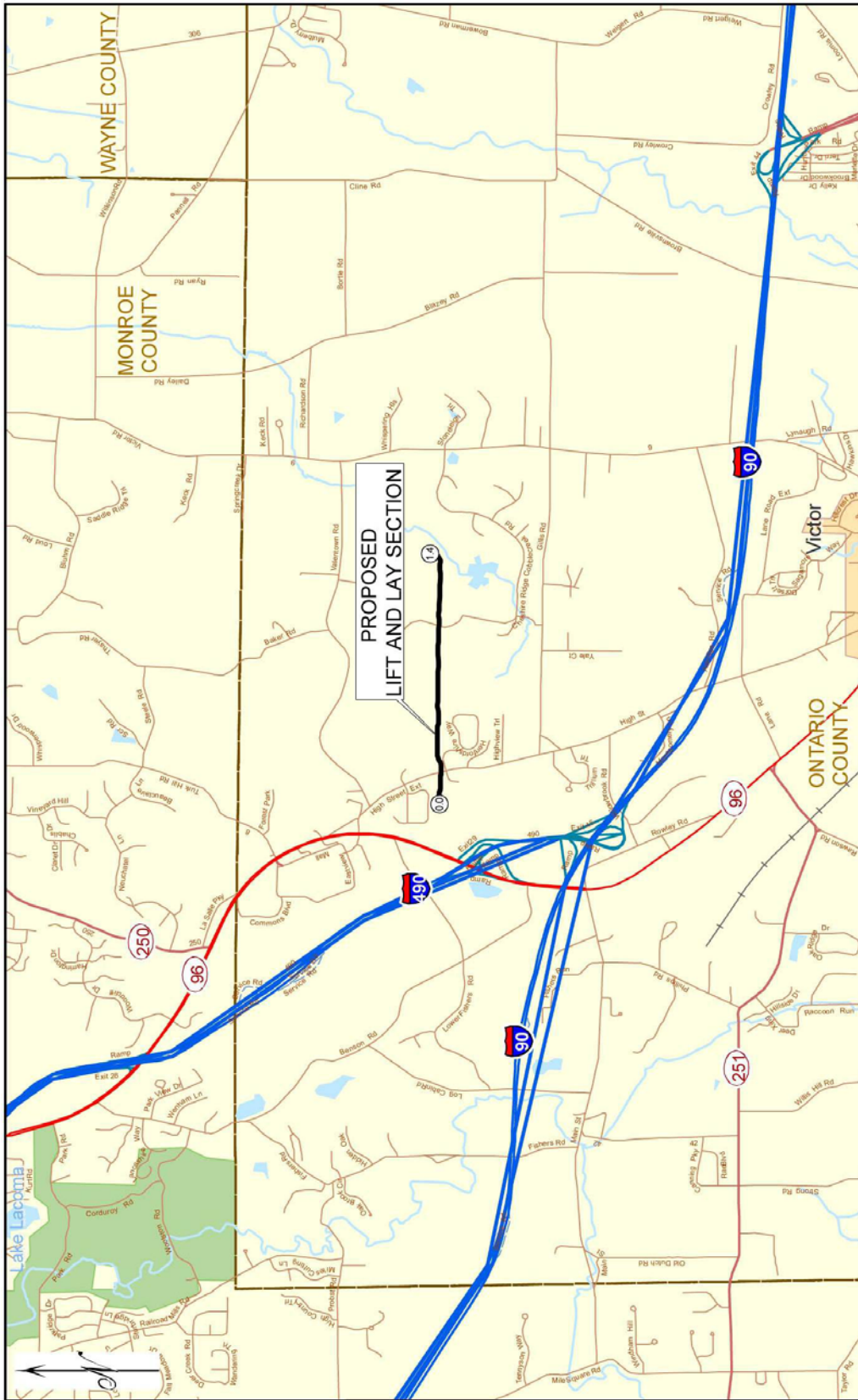


Figure 2: General Location of the Lift and Lay Section

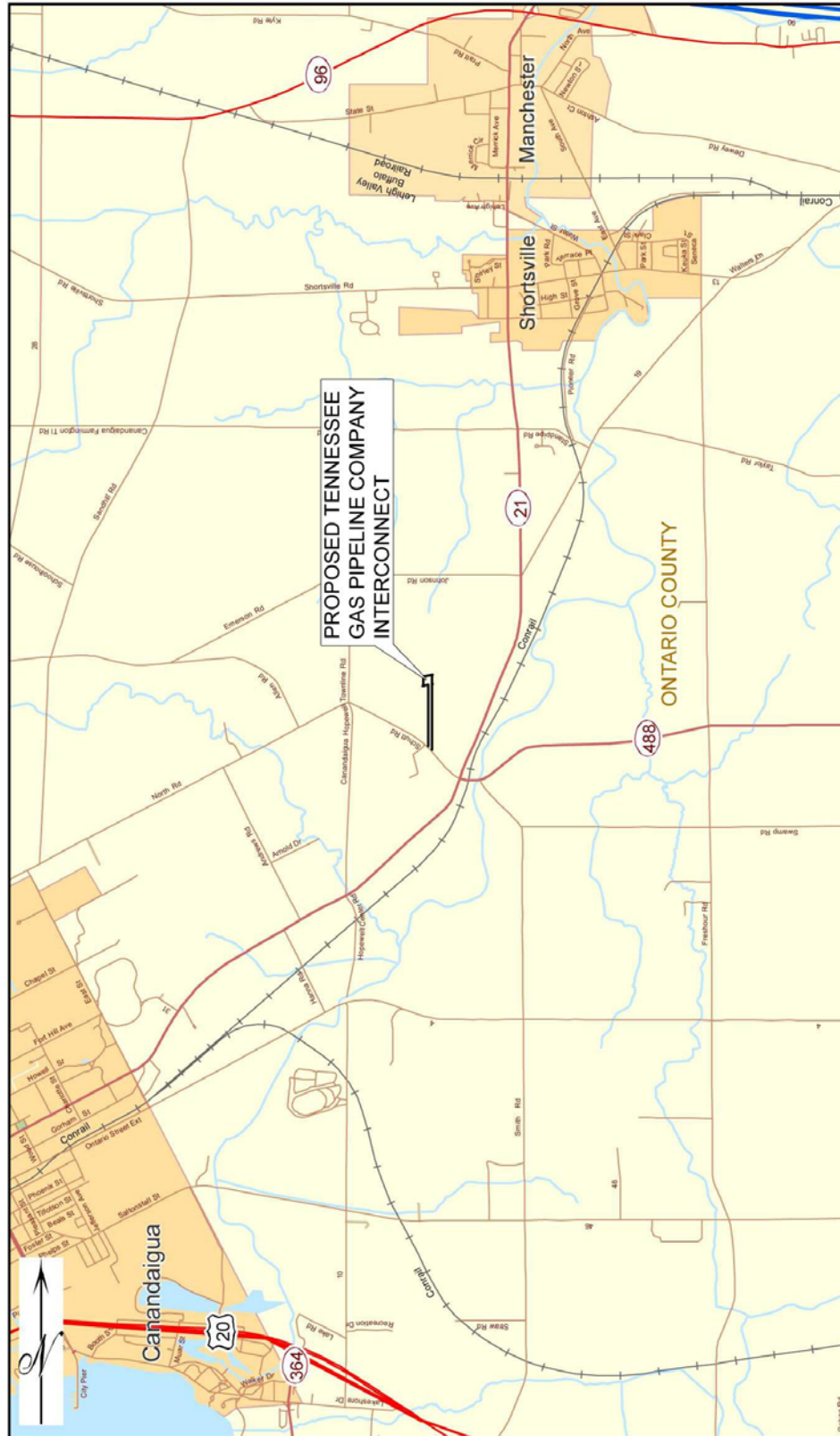


Figure 3: General Location of the TGP Interconnect Meter Station

[MLV] 16), and a heater installation including associated valve and piping modifications at Empire's existing New Victor Pressure Control Station on the east end of the pipe replacement.

- **Tennessee Gas Pipeline Company Interconnect Meter Station:** Construction of a new interconnect meter station with TGP in the Town of Hopewell, Ontario County, New York.
- **Oakfield Compressor Station:** Miscellaneous piping modifications and appurtenant facilities at the existing Oakfield Compressor Station in the Town of Oakfield, Genesee County, New York, completely within the previously disturbed and fenced area. No wetlands, streams, vegetation, natural habitat, or native intact soils would be disturbed at this site. See appendix A for a map showing the location of the Oakfield Compressor Station.

There are no non-jurisdictional facilities associated with this Project.

5.0 LAND REQUIREMENTS

Construction of the proposed Project would impact approximately 226.08 acres, including aboveground facility sites, pipeline construction workspace, additional temporary workspace (ATWS), and access roads. Of this total, 107.13 acres would be permanently dedicated to pipeline right-of-way, new aboveground facilities, and access roads. Construction of the pipeline facilities would disturb approximately 217.34 acres, of which 100.07 acres would constitute permanent pipeline easement and access roads. Construction of the aboveground facilities (Producer Interconnect Meter Station, MLV, and TGP Interconnect Meter Station) would disturb approximately 8.74 acres, of which 7.06 acres would be permanently impacted by aboveground facility footprints and access roads to the facilities. The proposed modifications to the Oakfield Compressor Station would occur within the existing facility site.

Table 1 identifies the land required for construction and operation of pipeline and aboveground facilities for each Project component.

The typical construction right-of-way width for the Tioga County Extension Section is 75 feet (50 feet of permanent easement and 25 feet of temporary workspace). An additional 25- to 50-foot width of ATWS would be utilized in agricultural areas to accommodate full right-of-way topsoil segregation. Appendix B includes a list of the ATWS locations, dimensions, and justification. Appendix C includes typical pipeline construction right-of-way configuration diagrams.

Empire proposes to install a mainline drip at milepost (MP) 1.4 to accumulate any liquids in the gas stream. The mainline drip and associated permanent access road would be installed within the proposed permanent easement. Empire would also install a concentrated groundbed for pipeline cathodic protection at MP 6.3. The groundbed would be installed within a 50-foot-by-800-foot (0.9 acre) permanent easement perpendicular to the proposed pipeline right-of-way adjacent to Ginnan Road.

The Lift and Lay Section would be constructed within Empire's existing pipeline right-of-way for the entire 1.36 miles. The existing easement is approximately 50 feet wide. The temporary construction workspace would be approximately 25 feet in width and would be immediately adjacent to the existing permanent easement.

Table 1: Land Required for Construction and Operation			
Project Facility	MP	Land Disturbed by Construction (acres)	Land Required for Operation (acres)
Tioga County Extension Section			
Pipeline Facilities	0.00-14.90	197.44	90.84
Producer Interconnect Meter Station	0.00	2.06	2.06
Mainline Valve Assembly	9.83	0.38	0.28
Piping and Valving Tie-in Assemblies	14.90	0.80	0.65
Sub-Total Tioga County Extension Section		200.68	93.83
Lift and Lay Section¹			
Pipeline Facilities	0.00-1.36	19.90	9.23
Valve & Piping Modifications at Existing Victor Pressure Control Station (no new aboveground facilities)	0.00	0.50	0.25
Gas Heater and Valving at Existing New Victor Pressure Control Station	1.36	0.83	0.58
Sub-Total Lift and Lay Section		21.23	10.06 ¹
TGP Interconnect Meter Station			
Pipeline Facilities	—	0.00	0.00
Interconnect Meter Station	—	2.13	1.70
Sub-Total TGP Interconnect Meter Station		2.13	1.70
Oakfield Compressor Station^b			
Pipeline Facilities	—	0.00	0.00
Piping Modifications and Appurtenances	—	2.04	1.54
Sub-Total Oakfield Compressor Station		2.04 ²	1.54
Total Land Required for Construction and Operation		226.08	107.13
¹ Land required for operation of the Lift and Lay Section consists of existing Empire permanent easements with adjustments as required.			
² Land disturbed by construction and land required for operation of the Oakfield Compressor Station piping modifications are entirely within the existing previously disturbed compressor station site and access road.			

In addition to that described above, Empire would utilize ATWS along the Tioga County Extension Section and Lift and Lay Section rights of-way for road crossings, horizontal directional drill (HDD) entry and exit points, waterbody and wetland crossings, side slopes, foreign pipeline crossings, and storage of segregated topsoil in agricultural areas. Following Project use, all ATWS would be restored to

pre-construction conditions to the extent practicable. A list of land requirements and locations for the ATWS is included as appendix B.

To the extent practical, existing public and private roads along the Project route would be used as the primary means of accessing the right-of-way. When existing public roadways are used for access purposes, Empire or its construction contractors would notify the appropriate agency, when applicable, of its intent to haul oversized loads on the road. Public roadways would be kept clean of soil and sediment. In addition to the existing access available by the use of public roads, Empire has identified 22 access roads, 15 of which are existing roads, on private lands that are proposed for use during construction (see table 2). Nineteen of the access roads would be retained for permanent use by Empire. This would allow Empire to access the proposed pipeline for operation and maintenance purposes. Landowner agreements would be secured for Empire's use of the access roads. Access and any upgrade requirements are described in table 2.

Table 2: Access Roads							
Access Road ID	MP	Proposed Use (Permanent or Temporary)	Existing Use/ New Road	Upgrade Requirements	Approx. Length (feet)	Approx. Width (feet)	Total Area Affected (acres)
Tioga County Extension Section							
PAR-1	0.00	Permanent	Field road	Permanent crushed stone access road to Producer Interconnect Meter Station	160	15	0.06
PAR-2	1.45	Permanent	Wooded/ New Road	Permanent crushed stone access road to proposed drip site - within new permanent easement	50	15	0.02
PAR-2A	3.36	Permanent	Wooded/ New Road	Permanent crushed stone access road to new permanent easement	1,100	15	0.38
PAR-3	4.27	Permanent	Existing gravel access road from Red School Road to existing well (600ft) and edge of agricultural field from existing well to proposed pipeline right-of-way (900ft)	Crushed stone	1,500	20	0.69
PAR-4	6.48	Permanent	Field road	Some crushed stone as needed	800	12	0.22
PAR-5	6.99	Permanent	Field road	Grading and crushed stone	330	12	0.09

Table 2: Access Roads							
Access Road ID	MP	Proposed Use (Permanent or Temporary)	Existing Use/ New Road	Upgrade Requirements	Approx. Length (feet)	Approx. Width (feet)	Total Area Affected (acres)
PAR-6	7.40 7.43 7.53	Permanent	Gravel field road	Grading and crushed stone	4,450	12	1.23
PAR-7	9.10	Permanent	Field road	Some crushed stone as needed	2,040	12	0.56
TAR-1	9.30	Temporary	Agricultural field/ New road	Topsoil Segregation - Geotextile fabric and crushed stone to access HDD exit site – fabric and stone would be removed and previous use re-established after construction	180	15	0.06
TAR-2	9.32	Temporary	Agricultural field/ New road	No upgrades anticipated (for temporary water source fill/discharge pipe)	940	15	0.32
TAR-3	9.35	Temporary	Field road	No upgrades anticipated	1,600	10	0.37
PAR-8	9.83	Permanent	Scrub/Brush/ New Road	Permanent crushed stone access road to proposed mainline valve site	520	15	0.18
PAR-9	10.36	Permanent	Field road	Some crushed stone as needed	2,250	12	0.62
PAR-10	11.32	Permanent	Dirt road	Some crushed stone as needed	560	14	0.18
PAR-11	12.62	Permanent	Dirt road	Grading, widening (approx. 5 ft+/-), and crushed stone	540	14	0.17
PAR-12	13.87	Permanent	Gravel road	Some crushed stone as needed	720	16	0.26
PAR-13	14.82	Permanent	Paved driveway to Compressor Station	None	840	15	0.29
PAR-14	14.90	Permanent	Field/Brush/ New Road	Permanent crushed stone access road	390	15	0.13
Tioga County Extension Section Sub-Total Proposed Temporary					2,720	–	0.75
Tioga County Extension Section Sub-Total Proposed Permanent					16,250	–	5.08
Tioga County Extension Section Sub-Total Overall					18,970	–	5.83

Table 2: Access Roads							
Access Road ID	MP	Proposed Use (Permanent or Temporary)	Existing Use/ New Road	Upgrade Requirements	Approx. Length (feet)	Approx. Width (feet)	Total Area Affected (acres)
Lift and Lay Section							
PAR-1L	0.00	Permanent	Gravel driveway to existing Victor Pressure Control Station	None	900	12	0.25
PAR-2L	1.36	Permanent	Gravel driveway to New Victor Pressure Control Station	None	2,100	12	0.58
Lift and Lay Section Sub-Total Proposed Permanent					3,000	–	0.83
TGP Interconnect Meter Station							
PAR-1T	N/A	Permanent	Agricultural field	Grading and crushed stone	2,030	15	0.70
TGP Interconnect Meter Station Sub-Total Proposed Permanent					2,030	–	0.70
Oakfield Compressor Station							
PAR-1O	N/A	Permanent	Gravel driveway to Compressor Station	None	2,800	24	1.54
Oakfield Compressor Station Sub-Total Proposed Permanent					2,800		1.54
Total Proposed Temporary					2,720	–	0.75
Total Proposed Permanent					24,080	–	8.15
Total Overall					26,800	–	8.90
PAR = Permanent Access Road TAR = Temporary Access Road							

6.0 CONSTRUCTION, OPERATION AND MAINTENANCE PROCEDURES

The proposed facilities would be designed, constructed, operated, and maintained in accordance with federal safety standards that are intended to ensure adequate protection for the public and to prevent natural gas pipeline accidents or failures. These regulations include the U.S. Department of Transportation (USDOT) regulations in 49 CFR 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*. Among other design standards, 49 CFR 192 specifies pipeline material selection; minimum design requirements; protection from internal, external, and atmospheric corrosion; and qualification procedures for welders and operations personnel. In addition, Empire would comply with 18 CFR 380.15, *Siting and Maintenance Requirements* and other applicable federal and state regulations.

Empire proposes to construct the Project facilities in accordance with the FERC *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures).² Because Empire has adopted the FERC Plan and Procedures, they will hereafter be referred to as Empire's Plan and Procedures. Empire proposes a modification of the FERC Procedures that is discussed in section B.2.3. Additionally, Empire would implement its *Erosion Sedimentation Control and Agricultural Mitigation Plan* (ESCAMP), which includes additional detailed environmental and agricultural protection measures. Empire would also implement a project-specific *Spill Prevention, Control and Countermeasure Plan* (SPCC Plan) that describes hazardous materials management protocol, preventative measures to avoid spills, and mitigation measures in the event of a spill. Empire would also follow the NYSDAM's Pipeline Construction Guidelines and Special Crop Productivity Monitoring Procedures. Empire filed a copy of its ESCAMP and the NYSDAM's Pipeline Construction Guidelines and Special Crop Productivity Monitoring Procedures on October 4, 2010, which can be viewed on eLibrary under this docket (CP10-493-000).

Empire proposes to use one environmental inspector (EI) and one agricultural inspector (AI) during construction of the Project (one pipeline spread). Additional environmental and agricultural inspection personnel would be added if more than one pipeline construction spread is necessary (based on the construction timing of various Project segments). The EI would be responsible for ensuring that construction activities are performed in compliance with the environmental conditions imposed on the Project. This includes the requirements of Empire's Plan and Procedures, ESCAMP and SPCC Plan; environmental conditions of the Certificate; any mitigation measures proposed by Empire; the requirements of other environmental permits and approvals; and landowner easement agreements. The EI would be responsible for identifying, documenting, and overseeing any corrective actions to bring an activity back into compliance, if necessary. The EI would also be responsible for ensuring that erosion controls are properly installed and maintained to prevent sediment flow from the right-of-way into wetlands, waterbodies, sensitive areas, and roads. A detailed list of the responsibilities for the EI is presented in Empire's Plan. The AI would ensure proper agricultural mitigation techniques are employed during construction of the Project. Empire's ESCAMP defines the qualifications and responsibilities required of its AI.

Empire anticipates beginning construction of the Project in March 2011, with an in-service date of September 1, 2011. A temporary workforce of approximately 260 total workers would be hired to construct the proposed Tioga County Extension Section, Lift and Lay Section, TGP Interconnect Meter Station, and the Oakfield Compressor Station modifications. Empire has indicated that permanent employees are not anticipated for operation of the facilities.

² Copies of our Plan and Procedures may be accessed on the FERC's Website (<http://www.ferc.gov/industries/gas/enviro/guidelines.asp>) or copies may be obtained through our Office of External Affairs by calling 866-208-3372. Copies of Empire's Plan and Procedures have been filed with the Commission and can be viewed on eLibrary at <http://www.ferc.gov/docs-filing/elibrary.asp> under this docket (CP10-493-000).

6.1 Aboveground Facilities

The Project's proposed aboveground facilities include two producer interconnects, one mainline valve assembly, a new interconnect with TGP, and modifications at the existing Victor and New Victor Pressure Control Stations and at the Oakfield Compressor Station.

Table 3: Aboveground Facilities			
Project Facility	New/Modified	MP	Location (County, State)
Tioga County Extension Section			
Producer Interconnect Meter Station	New	0.00	Tioga County, PA
Mainline Valve Assembly	New	9.83	Steuben County, NY
Piping and Valving Tie-in Assemblies	New	14.90	Steuben County, NY
Lift and Lay Section			
Valve & Piping Modifications at Existing Victor Pressure Control Station (no new aboveground facilities)	Modified	0.00	Ontario County, NY
Gas Heater and Valving at Existing New Victor Pressure Control Station	Modified	1.36	Ontario County, NY
TGP Interconnect			
TGP Meter Station	New	-	Ontario County, NY
Oakfield Compressor Station			
Piping Modifications and Appurtenances	Modified	-	Genesee County, NY

Tioga County Extension Section

Empire proposes to construct and operate two producer interconnects at the proposed Producer Interconnect Meter Station, one MLV assembly, and piping and valving tie-in assemblies along the Tioga County Extension Section.

Aboveground valves and piping would be installed on concrete and galvanized steel pipe supports. Metering facilities would be installed on skids or pads, and engineered buildings would be erected. Before placing the producer interconnect equipment and Tioga County Extension Section pipeline in service, piping would be hydrostatically tested in accordance with applicable codes. The meters, piping, and all associated equipment and systems would be thoroughly tested before being placed in service.

After start-up and testing, the producer interconnect site would be final graded and a fence would be installed around the perimeter of the facility. Gravel would then be applied to access roads, on-site driveways, and parking areas. Surplus construction materials would be stored, recycled, or disposed in an appropriate manner.

Lift and Lay Section

No new property or permanent easement would be required to accommodate the valve and piping modifications at the existing Victor or New Victor Pressure Control Stations. Before placing piping in service, it would be hydrostatically tested in accordance with applicable codes.

Following construction, the sites would be re-graded and covered with stone. Surplus construction materials would be stored, recycled, or disposed in an appropriately permitted disposal facility.

Tennessee Gas Pipeline Company Interconnect Meter Station

Below-grade piping installed at the TGP meter station would have cathodic protection and would be coated to prevent corrosion. Aboveground valves and piping would be installed on concrete and galvanized steel pipe supports. Before placing the equipment and station in service, piping would be hydrostatically tested in accordance with applicable codes. The meters, piping, and all associated equipment and systems would be thoroughly tested before initiating commercial service. Metering facilities would be installed inside pre-fabricated or engineered buildings.

After start-up and testing, the site would be final graded and a fence would be installed around the perimeter of the facility. Gravel would then be applied to the access road. Surplus construction materials would be stored, recycled, or disposed in an appropriate manner.

Oakfield Compressor Station

The majority of the modifications proposed at the existing Oakfield Compressor Station site involve below-ground piping and valving facilities; however, the valve actuators would be aboveground. No new property or permanent easement would be required for these modifications. Before placing the equipment and station in service, piping would be hydrostatically tested in accordance with applicable codes. The piping and all associated equipment and systems would be thoroughly tested before initiating commercial service.

6.2 Pipeline Facilities

6.2.1 General Construction Sequence

In upland and non-saturated wetland areas, pipeline construction would follow the sequence of construction operations described below. Special construction procedures would be implemented in certain areas as described further in section A.6.3.2. All pipeline construction would be performed in accordance with Empire's Plan and Procedures, ESCAMP and SPCC Plan, and all applicable permit requirements.

Right-of-Way Survey

Before the start of construction, land surveys would be finalized, land and easement acquisition would be completed, and the pipeline centerline and construction workspace would be marked. The construction work areas (e.g., nominal construction right-of-way and extra work areas) would first be surveyed and staked. Existing utility lines and other sensitive resources, identified in easement agreements or by federal and state agencies, would be located and marked to prevent accidental damage during pipeline

construction. Landowners would generally be notified at least 3 to 5 days before the start of construction unless earlier notice is requested during easement negotiations.

Clearing Operations

Initial clearing operations would include the removal of vegetation within the pipeline right-of-way and the temporary construction workspace either by mechanical or hand cutting. The limits of clearing would be identified and flagged in the field prior to any clearing operations. Unless grading is required for safety reasons, wetland vegetation would be cut off at ground level, leaving existing root systems intact and the aboveground vegetation removed from the wetlands for chipping or disposal. Stumps would be disposed according to any landowner restrictions. Disposal methods include burying alongside of right-of-way, windrowing alongside of right-of-way, placing in piles alongside right-of-way for wildlife denning habitat, or removing from the right-of-way to approved disposal locations. Timber would be removed from the right-of-way to approved locations for the landowners use. Brush and tree limbs would be windrowed along right-of-way, burned, or chipped. Wood chips would be spread in approved locations and used as mulch or hauled off-site for disposal.

The cleared width within the right-of-way and temporary construction workspace would be kept to the minimum that would allow for spoil storage, equipment operation, staging, assembly of materials, and all other activities required to safely construct the pipeline. Closely following clearing and before/during grading activities, erosion and sediment controls would be installed.

Right-of-Way and Temporary Construction Workspace Grading

The entire width of the construction right-of-way would be rough graded as necessary to allow for safe passage of equipment and to prepare a work surface for pipeline installation activities. Typically, the grading of the right-of-way would be completed with bulldozers. Backhoes would be used in conjunction with bulldozers in areas where boulders and tree stumps require removal.

In agricultural and residential areas, full right-of-way topsoil segregation techniques would be used. In wetlands, the mixing of topsoil with subsoil would be minimized by using trenchline topsoil segregation construction techniques (except when standing water or saturated soils are present).

Removal of Existing Pipeline

The Lift and Lay Section would require removal of an existing 24-inch-diameter pipeline. This would involve removing the cover over the existing pipeline, removing the old pipeline, and installing the replacement pipeline in approximately the same location using methods applicable to restricted right-of-way construction or immediately adjacent to the existing pipeline prior to its removal.

Prior to the removal of the existing pipeline, the pipeline would be purged of all gas and cleaned to remove any liquids. The old pipe would be disposed in accordance with approved procedures.

If any of the pipeline to be removed had been coated with products that contain asbestos, Empire would follow its standard operating procedure for removal and proper disposal of asbestos-containing materials. Empire's as-built records indicate that the coating is vintage 1993 fusion-bonded epoxy. The Lift and Lay Section is the only aspect of the Project involving the replacement or abandonment of facilities, and

Empire indicates that this section has no history of containing polychlorinated biphenyls (PCBs) in excess of 50 parts per million in pipeline liquids. As applicable, Empire would comply with its PCB testing standard procedures.

Trench Excavation

The trench for new pipeline would be excavated using conventional excavating machinery to provide three feet minimum cover over the pipeline (or two feet minimum cover in consolidated rock), as required by 49 CFR 192 of the USDOT regulations. Deeper cover is required in specific areas. For example, pipe in cultivated agricultural areas would be buried to provide four feet minimum cover over the pipeline. Should it become necessary to remove water from the trench, it would be pumped to an off-right-of-way, stable, vegetated upland area (where practical) and/or filtered through a filter bag or siltation barrier. In farmland areas where livestock could potentially come into contact with proposed construction activities, Empire would work closely with landowners to fence-off the trenches while providing temporary livestock and equipment crossings.

Stringing

Once the trench is excavated, the next process in constructing a pipeline is stringing the pipe along the trench. Stringing involves hauling the pipe by stringing trucks from the pipe storage yards onto the right-of-way. The pipe would be off-loaded from trucks and placed next to the trench using sideboom tractors. The pipe joints are then lined up end-to-end to allow for welding into continuous lengths known as strings.

Welding

The pipe joints are welded together. In some areas where construction space is limited, short sections of pipe would be pre-welded together in multiple joint sections and then carried to the limited space area for installation. Each weld is visually inspected and non-destructively tested by radiography.

Coating Inspection and Repair

The pipeline is coated to prevent corrosion. The pipe lengths would be coated at a coating mill prior to being delivered to the Project area. The ends of each piece are left bare to allow for welding. Once welds have been inspected and accepted, the weld is field-coated by the coating crew. The field coating is then inspected, and repairs are made as needed.

Lowering-In

After a pipe string has been coated and inspected, the trench is prepared for the installation of the pipeline. The trench is cleared of loose rock and debris. If water exists in the trench, the water is pumped out as described previously. In sandy soils, the trench is shaped to support the pipe. In areas where the trench contains bedrock, a sand bedding is placed on the bottom of the trench and/or pads made of sandbags and/or clay are placed at regular intervals along the trench bottom to support the pipe. The lowering-in crew places the pipeline in the trench. Lowering-in is typically done using multiple sideboom tractors working in tandem.

Tie-Ins

Once the sections of pipe are lowered-in, the tie-in crew makes the final welds in the trench. Additional excavation as needed, lining up, welding, non-destructive weld inspection, and coating the final welds are accomplished by this crew.

Backfilling

Suitable soil material excavated during trenching would be used to backfill the trench. In areas where excavated material is unsuitable for backfilling, additional select fill may be required. If the soil is rocky, the pipe is padded with relatively rock-free material placed immediately around the pipe. This material would be obtained from commercial borrow areas in the region. Where practical, the subsoil may be mechanically screened to produce suitable padding material. In no case would topsoil be used as padding material. Once the pipe is padded, the trench is then backfilled with suitable excavated subsoil material. The top of the trench may be slightly crowned to compensate for subsequent settling except in paved areas, where standard compaction methods would be employed. The topsoil is then spread across the graded construction right-of-way where applicable. In agricultural areas, ripped or blasted rock can be used for backfill, but no closer to the ground surface than 24 inches in mesic soils or 30 inches in frigid soils. Excess oversize waste rock excavated from the trench and not utilized as trench backfill would be removed and disposed accordingly. In agricultural areas where the materials excavated during trenching are insufficient in quantity to meet backfill requirements, imported subsoil material would be used. In areas where depth of soil over bedrock ranges from zero to forty-eight inches, the pipe would be buried entirely below the top of the bedrock or at the specified depth for the particular land use (see section 2.7.1 and 2.7.2 of the NYSDAM's Pipeline Construction Guidelines and Special Crop Productivity Monitoring Procedures), whichever is less.

Permanent trench breakers consisting of sandbags, polyurethane foam, or cement-filled sacks would be installed when the trench is backfilled in ditches over and around the pipe in areas of slope with erosion potential. Temporary trench plugs, usually composed of compacted earth or other suitable low-permeable material, would be used to isolate waterbodies and wet areas to minimize channeling of groundwater along the ditch line during construction. Trench breakers are installed for the dual purpose of preventing trench washouts during construction and abating water piping and blowouts subsequent to trench backfill. In agricultural areas, the AI would record each installed trench breaker location by map-referenced station number.

Hydrostatic Testing

The pipeline would be pressure tested in accordance with the requirements of 49 CFR 192 to ensure its integrity for the intended service and operating pressures. The test section is filled with water and pressurized using a high-pressure pump. The water is sourced and discharged according to applicable permits or authorizations. At the completion of the hydrostatic test, the pressure is relieved from the section and the water is removed by propelling the pig³ with air pressure, which forces the water out. If

³ A "pig" is a tool that is inserted into and moves through the pipeline, and is used for cleaning the pipeline, internal inspections, or other purposes.

necessary, additional “drying” pig runs are made to remove any residual water from the test section. See section B.2.2 for further information on hydrostatic testing.

Restoration and Revegetation

A cleanup crew would complete the restoration and revegetation of the right-of-way and temporary construction workspace. In general, every effort would be made, weather and soil conditions permitting, to complete final cleanup (including final grading) and installation of permanent erosion control measures within 20 days after the trench is backfilled. These restoration activities would be completed in residential areas within 10 days of backfilling. Excess woody material and construction debris would be removed from the right-of-way, and the right-of-way would be final graded to prepare for restoration. Permanent slope breakers or diversion berms would be constructed and maintained in accordance with Empire’s Plan and Procedures. Affected fences would be restored or repaired as necessary.

Revegetation would be completed in accordance with permit requirements and written recommendations on seeding mixes, rates, and dates obtained from the local soil conservation authority. The right-of-way would be seeded within six working days following final grading, weather and soil conditions permitting. Alternative seed mixes specifically requested by the landowner or required by agencies may be used. Any soil disturbance that occurs outside the permanent seeding season or any bare soil left unstabilized by vegetation would be mulched in accordance with Empire’s Plan and Procedures. Although not anticipated, if construction extends past October 15, Empire has committed to submitting a Winter Stabilization Plan for FERC’s approval prior to constructing in the winter timeframe. In agricultural areas, right-of-way restoration would not occur between the months of October through May unless favorable soil moisture conditions exist. Soil conditions suitable for restoration would be determined by the AI in consultation with NYSDAM staff. In agricultural areas, the soil would be inspected for compaction and decompacted as necessary, and crop production would be monitored until crop yields are consistent with adjacent undisturbed fields.

6.2.2 Special Construction Procedures

Rugged Topography

During grading of side slopes, the upslope side of the pipeline right-of-way would be cut. The material removed from the cut would be used to fill the downslope edge of the right-of-way to provide a safe and level surface from which to operate the heavy equipment. Side hills may require ATWS downslope in order to accommodate the fill material. During grade restoration, the spoil would be placed back in the cut and compacted.

Residential Areas

Where residences are located in proximity to the construction right-of-way, Empire would reduce construction workspace as practicable to minimize inconvenience to property owners. Final grading, topsoil replacement, and installation of permanent erosion control structures would be completed within 10 days after backfilling the trench in residential areas. Following construction, the property would be restored to original condition or as requested by the landowner. Section B.4.1 discusses Empire’s

proposed mitigation for residences within 50 feet of construction workspace. Site-specific Residential Mitigation Plans are included as appendix E.

Crop and Pasturelands

In areas where the pipeline trench would cross active agricultural lands or pasturelands, topsoil would be stripped and segregated from the full construction right-of-way, typically utilizing 100 to 125 feet. After the pipe has been lowered into the ditch, subsoil is used for backfilling and topsoil is then spread across the graded right-of-way. Equipment traffic would be strictly controlled within cropland to minimize rutting or compaction. Soil compaction mitigation and oversized rock removal would be performed in accordance with Empire's ESCAMP and its Plan and Procedures.

Prior to construction, the AI would consult with the affected landowners and each County Soil & Water Conservation District to identify any known or suspected location of subsurface drain tiles within the construction work area. Empire would develop procedures in coordination with the NYSDAM for constructing through drain tile areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction. Any drain tiles damaged during construction would be restored in accordance with U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) Conservation Practice Standards.

Road Crossings

Road crossings would be completed using open-cut, boring, jacking, or horizontal directional drilling (HDD) techniques, depending upon site-specific conditions and state and local regulations. Table 4 provides a list of public roadways crossed by the Project.

During the open-cut method of roadway crossing, at least one lane of traffic is typically kept open when constructing on or across residential streets. However, traffic detouring may be utilized in some areas. During the brief period when a road is completely cut, steel plates would be available on-site to cover the open area to permit travel by emergency vehicles. Traffic lanes and home access would be maintained except for the temporary periods essential for installing the pipeline.

Boring or jacking would be performed under more heavily-used roadways. First, a bore pit is dug on one side of the roadway and a receiving pit dug on the other. The bore pit is excavated to a depth equal to the depth of the bore hole and is graded such that the bore would follow the grade of the pipe. Boring/jacking operations are performed and a carrier pipe is installed under the roadways using trenchless techniques. This is typically performed without impacting traffic flow. The HDD proposed for this Project (MP 9.3 to 9.8 on the Tioga County Extension Section) would include multiple road crossings, waterbody crossings, and a railroad crossing.

Prior to construction, the "Dig Safely New York" and "Pennsylvania One Call" systems would be contacted to verify and mark all utilities that would be crossed by the Project. Where there is a question as to the location of utilities, such as water, cable, gas, and sewer lines, they would be located by field instrumentation and test pits.

Table 4: Public Roadways Crossed					
Project Component	MP	Roadway Name	Roadway Type (Paved, Unpaved)	Jurisdiction (Federal, State, Local)	Proposed Crossing Method ¹
Tioga County Extension Section	0.16	State Line Road	Paved	Local	Open Cut
	1.43	Sagetown Road/County Route 32	Paved	County	Open Cut
	2.38	John Hill Road	Unpaved	Local	Open Cut
	3.19	Riley Hill Road	Unpaved	Local	Open Cut
	3.89	Hittown Road	Paved	Local	Bore
	4.71	Mathews Road	Paved	Local	Bore
	5.45	State Highway 225	Paved	State	Bore
	5.90	Hill View Road	Unpaved	Local	Open Cut
	6.20	Ginnan Road	Paved	Local	Bore
	7.11	Ginnan Road	Paved	Local	Bore
	9.34	River Road/County Route 44	Paved	County	HDD
	9.60	Ramp for I 86/17 East	Paved	Federal	HDD
	9.61	I 86/17 East	Paved	Federal	HDD
	9.62	I 86/17 West	Paved	Federal	HDD
	9.64	Exit 47 Ramp for I 86/17	Paved	Federal	HDD
	9.71	State Highway 352 East	Paved	State	HDD
	9.72	State Highway 352 West	Paved	State	HDD
	12.18	Gorton Road	Paved	Local	Bore
	13.30	County Route 45	Unpaved	County	Open Cut
	14.69	West Road	Unpaved	Local	Open Cut
Lift and Lay Section	0.17	High Street	Paved	Local	Bore
¹ The method identified for each road crossing is preliminary and would be finalized during the detailed road permitting process with applicable jurisdictional agencies.					

Blasting

Based on the field reconnaissance and review of soils and geologic maps of the Project area, shallow bedrock (less than 5 feet from the surface) would be encountered at various locations along the Project route.

Rock encountered during trenching would be removed using one of the following techniques; the technique selected is dependent on the relative hardness, fracture susceptibility, and expected volume of the material.

Techniques include:

- conventional excavation with a backhoe;
- ripping with a dozer followed by backhoe excavation;
- hammering with a hydraulic hammer followed by backhoe excavation; and
- blasting followed by backhoe excavation.

Blasting required for the Project would be conducted in accordance with Empire's Blasting Plan. The Project Blasting Plan contains special provisions that would be taken to monitor and assess blasting near water supply wells. Specifically, Empire would conduct pre- and post-blast surveys for any blasting activities within 150 feet of private or public water supply wells, where landowner access is granted. Empire would work closely with landowners to ensure that no adverse impacts arise from blasting activities.

The Project Blasting Plan also contains special provisions for blasting near residences, should that situation arise. Large rock not suitable for use as backfill material would either be windrowed along the edge of the right-of-way with permission from the landowner, used to construct all terrain vehicle barriers across the right-of-way, crushed, and used as backfill or buried on the right-of-way. Otherwise the excess rock would be hauled off site and disposed in an appropriate manner.

All blasting activity would be performed by licensed professionals according to strict guidelines designed to control energy release. Proper safeguards would be taken to protect personnel and property in the area. Charges would be kept to the minimum required to break up the rock. Where appropriate, mats made of heavy steel mesh or other comparable material or trench spoil would be utilized to prevent the scattering of rock and debris. These activities would adhere to all local, state, and federal regulations that apply to controlled blasting and limiting blast vibration near structures and underground utilities. Blasting in the vicinity of nearby utilities would be coordinated with the owner, as necessary. Areas of shallow bedrock, which may require blasting, are identified in section B.1.1 (see table 6).

Wetlands

Empire would adhere to its Plan and Procedures with regard to construction practices within wetlands along the Project route. Construction methods would minimize the extent and time that construction equipment operates in wetland areas. When wetland soils are inundated or saturated to the surface, the pipeline trench would be excavated across the wetland by equipment on wooden timber mats to support the equipment and minimize the disturbance to wetland soils. In wetlands that have firm substrates and are unsaturated, the top 12 inches of wetland soil over the trenchline would be segregated. In scrub/shrub wetlands, Empire would not cut and remove shrubs outside the trench and stringing areas where feasible.

ATWS would be needed adjacent to specific wetlands to facilitate the pipeline crossing. The staging areas are in addition to the construction right-of-way and may be used for the assembly and fabrication of the pipeline section that would cross the wetland area. These work areas would be located at least 50 feet

away from the wetland edge (except in actively cultivated or rotated agricultural lands and other disturbed areas), topographic and other site-specific conditions permitting. If topographic conditions do not permit a 50-foot setback, these areas would be located at least 10 feet away from the wetland.

The size of ATWS required at wetland crossings is based on the wetland size, water content of wetland soils (or presence of standing water), and other construction constraints. The work area would be limited to the minimum size necessary to safely construct the wetland crossing.

Waterbodies

Empire would adhere to its Plan and Procedures with regard to construction practices within waterbodies along the Project route. All flowing streams would be crossed using a dry crossing method. The dry crossing methods include installation of a flume pipe(s) and/or dam and pump prior to trenching to maintain downstream flow and to divert the stream flow over the construction area and allow trenching of the stream crossing in drier conditions isolated from the stream flow. Stream channels that are dry at the time of crossing would be open cut. Spoil removed during the trenching would be stored away from the water's edge and protected by sediment containment structures. Where these methods are employed, ATWS areas would be required for assembly of the pipe strings and spoil storage areas. Stream bed substrate would be restored to match pre-construction conditions or better.

To facilitate pipeline construction across waterbodies, ATWS may be needed adjacent to the waterbody to assemble and fabricate the length of pipe necessary to complete the crossing. This work area is in addition to the construction right-of-way and would be located at least 50 feet away from the water's edge (except in actively cultivated or rotated agricultural lands and other disturbed areas). The work area would be limited in size to the minimum area necessary to safely construct the waterbody crossing and accommodate any stockpile of excavated material from the trench and the pre-fabricated pipeline crossing section. The size of ATWS areas can vary based on site-specific conditions.

6.3 Operation and Maintenance

Empire would operate and maintain the proposed facilities in accordance with the applicable safety standards established by the USDOT (49 CFR 192). The pipelines would be patrolled on a routine basis and personnel well qualified to perform both emergency and routine maintenance on interstate natural gas pipeline facilities would handle emergency maintenance. This would provide information on possible leaks, construction activities, erosion, exposed pipe, population density, possible encroachment, and other potential problems that may affect the safety and operation of the pipeline.

The proposed facilities would be operated and maintained in a manner such that pipeline integrity is preserved in the interest of assuring that a safe, continuous supply of natural gas reaches its ultimate destination. Maintenance activities would include regularly-scheduled gas leak surveys and measures necessary to repair any potential leaks. The latter may include repair or replacement of pipe segments. All fence posts, signs, marker posts, and decals would be painted or replaced to ensure that pipeline locations are visible. All valves would be periodically inspected and greased.

Other maintenance functions would include as applicable:

- periodic seasonal mowing of the permanent easement in accordance with the vegetative maintenance restrictions outlined in Empire’s Plan and Procedures;
- right-of-way restoration repairs; and
- periodic inspection of waterbody crossings.

During permanent easement maintenance, Empire would not use herbicides or pesticides within 100 feet of a wetland or waterbody unless approved by appropriate federal, state, and local agencies.

Cathodic protection facilities installed along the pipeline would be regularly monitored to maintain the required pipe-to-soil potential. This would be achieved in accordance with the specifications set forth by Empire that meet or exceed USDOT regulations.

7.0 PERMITS, APPROVALS AND REGULATORY REQUIREMENTS

A number of federal, state, and local regulatory agencies have permit or approval authority or consultation requirements for portions of the proposed Project (see table 5). Empire would be responsible for obtaining all permits and approvals required to construct and operate the Tioga County Extension Project, regardless of whether or not they appear in this table.

8.0 FUTURE PLANS AND ABANDONMENT

Empire has no definitive plans for either future expansion or abandonment of the proposed facilities. Market forces would determine the timing and need for future expansions. If Empire elects to pursue the development of additional facilities, it would notify the Commission in a timely manner and would request the applicable regulatory approvals from the FERC and other agencies. Abandonment of the facilities would also require authorization from the FERC.

Table 5: Environmental Permits and Approvals

Permit/Approval/Consultation	Agency
FEDERAL	
Certificate of Public Convenience and Necessity	Federal Energy Regulatory Commission
Endangered Species Act – Section 7 Consultation	U.S. Fish and Wildlife Service
Sections 10 (Rivers and Harbors Act) and 404 (Clean Water Act)	U.S. Army Corps of Engineers, Buffalo District (for portion of Project in NY)
	U.S. Army Corps of Engineers, Baltimore District (for portion of Project in PA)
STATE	
State Pollutant Discharge Elimination System General Permit	NY State Department of Environmental Conservation
National Pollutant Discharge Elimination System General Permit for Discharges from Hydrostatic Testing of Tanks and Pipelines	PA Department of Environmental Protection
Section 401 Water Quality Certification	NY State Department of Environmental Conservation
Section 401 Water Quality Certification	PA Department of Environmental Protection
Cultural Resources Consultation and Review	New York Office of Parks, Recreation & Historic Preservation
Cultural Resources Consultation and Review	Pennsylvania Historical & Museum Commission
State Endangered Species Consultation	NY State Department of Environmental Conservation – Division of Fish, Wildlife, and Marine Resources – Natural Heritage Program
	PA Department of Conservation and Natural Resources, Bureau of Forestry, Ecological Services Section
	PA Fish and Boat Commission
	PA Game Commission
Water Well Notification	NY State Department of Health
Recommendation on agricultural restoration, seeding, erosion and sediment control, soil mitigation and agricultural mitigation	NY State Department of Agriculture & Markets
LOCAL/REGIONAL	
Recommendation on erosion and sediment control	Tioga County Conservation District (Delegated by PA Department of Environmental Protection)
	USDA-Natural Resources Conservation Service
18 CFR 801, 806, 807, and 808 – Consumptive water use	Susquehanna River Basin Commission
Recommendation on seeding, erosion, and sediment control and soil mitigation	Steuben County Soil and Water Conservation District

B. ENVIRONMENTAL ANALYSIS

1.0 GEOLOGY AND SOILS

1.1 Geology

Geologic Setting

The proposed pipeline sections are located in the Appalachian Plateau Province of western New York and north central Pennsylvania. The Tioga County Extension Section is located in Tioga County, Pennsylvania and Steuben County, New York, south of the New York Finger Lakes, while the Lift and Lay Section and TGP Interconnect Meter Station are located to the north in the Lake Ontario river basin area of Ontario County, New York. Elevations on the Tioga County Extension Section range from approximately 900 feet to 1,900 feet above sea level. Elevations on the Lift and Lay Section range from approximately 700 to 800 feet above sea level. The TGP Interconnect Meter Station has an elevation of approximately 730 feet above sea level.

The geology of the entire area can be generally characterized as post glacial from the Wisconsin geologic period. In general, the geology of the region is made up of sedimentary rocks and till overlaying deeper and older aged Devonian bedrocks of shale and sandstone nature. Bedrock underlying the area is flat-lying shale, limestone, siltstone, and sandstone that were deeply eroded by preglacial drainage. Empire identified areas of shallow bedrock, which may require blasting (see table 6).

Empire identified two residences within a 200 foot zone of potential impact. Empire would follow the construction methods described in section A.6.2.2 in these areas of shallow bedrock. This zone represents the area where fly-rock and/or air blasts may impact. Empire would minimize explosive methods of excavation and take precautionary measures to control potential damage from fly-rock and/or air blast. All blasting activity would be performed by licensed professionals according to strict guidelines designed to control energy release. Proper safeguards would be taken to protect personnel and property in the area; therefore, we believe that impacts from blasting would be minimized.

Mineral/Geologic Resources

Empire's stated purpose of the Project is to provide transportation services for producers delivering gas from the Marcellus Shale. The Marcellus Shale is a black shale formation extending deep underground generally from Ohio and West Virginia northeast into Pennsylvania and southern New York. Although the Marcellus Shale is exposed at the ground surface in some locations in the northern Finger Lakes area, it is as deep as 7,000 feet or more below the ground surface along the Pennsylvania border in the Delaware River valley. The Project would not impact, or be impacted by, drilling activities in the Marcellus Shale.

The principal materials mined in the Project area include glacial till, sand, gravel, and topsoil. The Tioga County Extension Section would cross an area of a potential future quarry or surface mine from MP 8.64 to MP 9.27. This area is near a sand and gravel operation that is approximately 550 feet west of the route at MP 9.25. Empire is currently in negotiations with the landowners to ensure that no future mining or

Table 6: Areas of Shallow Bedrock/Areas Potentially Requiring Blasting			
Location	Soil Type	Milepost	
Tioga County Extension Section, Steuben County, NY	Lordstown channery silt loam, 3-20% slopes, (LoB, LoC)	1.06	1.11
		1.15	1.24
		1.73	1.88
		4.48	4.66
		6.55	6.65
		7.45	7.74
		8.20	8.29
		10.03	10.12
		12.61	12.66
	Lordstown-Arnot association, steep to very steep, (LRE, LRF)	1.11	1.15
		1.24	1.34
		1.37	1.41
		1.67	1.73
		1.88	1.89
		3.38	3.45
		8.02	8.20
		8.29	8.34
		8.34	8.48
		8.48	8.48
		9.94	10.03
		10.28	10.31
	Lordstown-Arnot association, steep to very steep, (LRE, LRF)	11.43	11.75
		12.83	12.98
	Arnot channery silt loam, 2 to 20% slopes, (ARC)	3.07	3.11
		10.12	10.28
		10.31	10.35
		12.66	12.75
		14.00	14.23
		14.39	14.49
		14.54	14.90
Piping and Valving Tie-In Facility	Arnot channery silt loam, 2 to 20% slopes, (ARC)	14.90	

digging would occur that may jeopardize the integrity of the proposed pipeline. The easement agreements would provide compensation to landowners for any potential pipeline impact on future mining operations.

There are no known areas of mineral resources or planned or active mines in the vicinity of the Lift and Lay Section or the TGP Interconnect Meter Station.

Seismic Hazards

There is very little seismicity in the region. The U.S. Geological Survey (USGS) and the Federal Emergency Management Agency (FEMA) characterized this area of Pennsylvania and New York State as having a low earthquake hazard.

Flooding Potential

A review of the FEMA Q3 Floodplain Data for the Project area indicates that a 100-year floodplain exists between MPs 8.6 and 9.7 on the Tioga County Extension Section. Empire has accounted for this potential issue in its design and installation plans for the proposed facilities. No aboveground facilities would be located in this or any other designated floodplain areas. In addition, no impacts on the flood control levees on the south side of the Chemung River (north of River Road) would occur due to the Chemung River HDD crossing. The below-ground pipeline in the floodplain would be buried with a minimum of four feet of cover and therefore is not expected to be susceptible to flood damage.

Slope Stability

Slope stability may be a concern in some areas of the Project. To prevent erosion and minimize channeling of groundwater along the ditch line, permanent trench breakers consisting of sandbags, polyurethane foam, or cement-filled sacks would be installed before the trench is backfilled in areas of slope with erosion potential. In agricultural areas, trench breakers are installed for the dual purpose of preventing trench washouts during construction and abating water piping and blowouts subsequent to trench backfill. The distance between permanent trench breakers may range from relatively close spacing, such as the toe of the upper trench breaker being level with the head of the lower trench breaker, to a relatively greater spacing. In agricultural areas, the AI would record each installed trench breaker location, by map-referenced station number.

If side slopes requiring special construction are encountered, the techniques described in section A.6.3.2 would be used. In non-agricultural areas, any springs or seeps found in the cut would be conveyed downslope through shallow rock lined open ditches, PVC pipe, and/or gravel-filled French drains installed as part of the cut restoration. In agricultural areas, subsurface drain tiles would be installed in accordance with the typical drawing for Drain Tile Repair contained in the ESCAMP.

Soil Liquefaction

Due to the relatively low levels of seismic activity and possible ground motion estimated for the Project area, there is little risk for liquefaction of the loose sand layers underlying the Project area. Therefore, soil liquefaction is not considered a potential hazard to the Project.

Subsidence and Karst Terrain

There is no history of underground mining in the Project area; therefore, there is very low potential for ground subsidence. There is no known karst terrain in the Project area.

In conclusion, construction and operation of the Project is not anticipated to result in significant adverse effects on any geologic resources.

1.2 Soils

There are 23 soil units in the Project area which are classified as moderately well drained soils to very poorly drained, with very slow to moderately slow permeability. Five of the 23 units are classified as hydric. Loamy, silty, and clayey soils are dominant. Of the 23 soil units, 9 are classified as prime farmland. The proposed Tioga County Extension Section and Lift and Lay Section include 75.43 acres of

prime farmland soils within the construction right-of-way, 17.33 acres of which would be retained as permanent easement. There would be no permanent impact on prime farmland from maintenance of the permanent easement, as agricultural activities would be allowed to continue. Construction of the TGP Interconnect Meter Station would impact approximately 2.13 acres of prime farmland, 1.70 acres of which would be dedicated to the permanent aboveground facility and access road. The NYSDAM stated that although the land is designated as prime farmland, it would classify the current land use of this particular area as fallow or inactive agricultural land. Woody plants are present in this area, which indicates that the field has not been worked for at least three years. The proposed access road to the TGP Interconnect Meter Station is located on the field edge nearest to Schutt Road. The agricultural land use for the access road could be considered active; however, brushy vegetation is present, which indicates that the landowner generally avoids working this area. Given that the proposed TGP Interconnect Meter Station and access road locations are not active agricultural areas and Empire would follow its Plan, ESCAMP, and the NYSDAM Pipeline Construction Guidelines and Special Crop Productivity Monitoring Procedures, we believe that impacts on prime farmland would be minimized.

General right-of-way conditions to be monitored by Empire following construction include topsoil thickness, relative content of rock and large stones, trench settling, crop production, drainage, and repair of severed fences. Through adherence to its Plan and Procedures and ESCAMP, Empire would monitor post-construction agricultural restoration activities for a two-year period or until pre-construction conditions or yields are achieved. Additional follow-up restoration activities would be performed as necessary through consultation with landowners and the NYSDAM.

Project construction may affect soils and revegetation potential through clearing and grading, trenching, backfilling, and restoration. With respect to reductions in soil quality, the most significant potential causes include inadvertently mixing topsoil with subsoil, bringing excess rocks to the surface, compacting soil by heavy equipment, and disrupting surface and subsurface drainage patterns.

To minimize the potential for topsoil mixing, Empire would segregate topsoil from the full construction work area in actively cultivated or rotated croplands and pastures. The erosion and sediment control measures described in Empire's Plan and Procedures and ESCAMP would be utilized to minimize the potential for soil erosion. Temporary erosion controls, including interceptor diversions and sediment filter devices (e.g., hay bales and silt fences) would be installed, as needed, after clearing but prior to initial grading. The devices would be regularly inspected and maintained until restoration and revegetation are complete. Once stabilization has been achieved, temporary erosion control devices would be removed. Empire would monitor the effectiveness of revegetation and permanent erosion control devices during facility operation.

For lands disturbed within or adjacent to agricultural areas where construction alters the natural stratification of soil horizons and natural soil drainage patterns, Empire would mitigate the effects with measures such as installation of subsurface intercept drain lines. Selection of the types of intercept drain lines to install to prevent surface seeps and seasonally prolonged saturation of the backfilled trench zone and adjacent area would be performed by a qualified Agricultural Drainage Specialist. In its July 27, 2010 comment letter, the NYSDAM identified concerns regarding soil instability and erosion potential.

Empire incorporated special construction mitigation measures in its ESCAMP to address these concerns. Empire would continue to work with the NYSDAM regarding any additional mitigation measures.

Vulnerable agricultural soils are defined as areas of cropland, hayland, or pasture which are somewhat more highly-sensitive than other agricultural soils to construction disturbance due to slope, relative soil wetness, and/or shallowness to bedrock. Wetness conditions are the result of factors such as landscape position, soil texture, seasonal water table, and/or slowly permeable subsoil horizons (e.g., areas of laterally-draining subsoils).

Appendix D describes the characteristics of the soils crossed by the Project. All vulnerable agricultural soils including, but not limited to, those identified on the county soil survey as fragipans, lacustrines, dense basal tills, soils with seasonally high water table, or soils with less than five feet of depth to bedrock are also identified in appendix D.

Empire's SPCC Plan specifies preventive measures and cleanup procedures related to inadvertent releases of fuels, lubricants, coolants, or solvents. Empire would implement the SPCC Plan to avoid or minimize accidental spills of contaminants and to ensure that, if a release did occur, it would be contained and cleaned up appropriately, with proper application of waste disposal measures. Through adherence to Empire's ESCAMP and SPCC Plan, we believe potential impacts on soils would be minimized.

2.0 WATER RESOURCES AND WETLANDS

2.1 Groundwater

The Steuben County public water supply comes from groundwater, with uses including public drinking water and other residential, agricultural, and industrial uses. Both the City of Corning's and the Town of Caton's public water supply is drawn from wells fed by the Chemung Valley Aquifer. Five wells from this aquifer are located throughout the city and surrounding town. None of these wells are within 0.5 mile of the proposed Tioga County Extension Section pipeline route. Outside of the Chemung River Basin, both north and south of the City of Corning, private wells draw from bedrock fractures that are connected to the Corning aquifer. All water for the Town of Caton is drawn from private wells. Two private wells were identified within 150 feet of the proposed Tioga County Extension Section pipeline construction corridor in Steuben County. No public water supply wells are within 0.5 mile of the proposed pipeline construction corridor.

No private wells were identified within 150 feet of the proposed Lift and Lay Section construction corridor. In addition, no public water supply wells are located within 0.5 mile of the proposed pipeline construction corridor; therefore, no wellhead protection areas would be crossed. A municipal water distribution system for the Town of Victor would be crossed by the Project. Empire would ensure that the waterline is not damaged and water quality is not impacted as a result of the Project.

No private wells were identified within 150 feet of the proposed construction workspace for the TGP Interconnect Meter Station, nor were public water supply wells located within 0.5 mile.

Empire would exercise care during construction to protect the integrity of the water wells located within 150 feet of the construction corridor for the Tioga County Extension Section. In accordance with

landowner permission, Empire would measure the flow capacity of each well prior to and after construction. In addition, Empire would test the well water prior to and after construction to determine any impact on water quality. If it is determined that a well is adversely affected from the construction of the proposed facilities, Empire would be responsible for the appropriate level of repair or well replacement.

Potential impacts on groundwater include contamination from spills of fuels and other materials used to maintain construction equipment. In addition, blasting could damage water wells in the vicinity of pipeline construction. Empire would minimize impacts on groundwater by implementing its Plan, Procedures, and SPCC Plan. Given the shallow depth of excavation and blasting, it is not expected that there would be any adverse impacts on aquifers in the Project area. In addition, within 30 days after completion of construction, Empire would file a report with the Commission detailing any complaints regarding well quality and yield and how those complaints were resolved. Based on the above, we conclude that the Project is unlikely to adversely affect groundwater resources.

2.2 Surface Water

The Tioga County Extension Section would cross 17 waterbodies within the Susquehanna River Basin (see table 7). Six of the waterbodies that would be crossed are perennial, with the remainder being intermittent. If flowing water is present at the time of crossing, Empire proposes to use a dry crossing technique (flumed, dam and pump, or HDD), in accordance with its Procedures. Empire would avoid impacts on two perennial waterbodies (Chemung River and Whisky Creek) by implementing an HDD crossing. The pipeline would be buried with a minimum five feet of cover (unless in consolidated rock). Following construction, all waterbody crossings would be restored to pre-construction contours and elevations. No waterbodies would be crossed by the Lift and Lay Section or the TGP Interconnect Meter Station.

Empire would not cross any sensitive waterbodies, federal wild and scenic rivers, or waterbodies that are contaminated or impaired. In addition, none of the proposed waterbody crossing locations are within three miles upstream of public water supply intakes.

Construction of the Project would result in minor, short-term impacts on most waterbodies crossed. Empire's proposed HDD crossing would avoid impacts on two perennial waterbodies. The impacts would occur as a result of in-stream construction activities and construction adjacent to stream channels. Clearing and grading of stream banks, trench dewatering, and initial release of water flow within the restored channel could result in temporary modifications of aquatic habitat, increased sedimentation, turbidity, and decreased dissolved oxygen concentrations. In general, these impacts would be limited to during and immediately following the in-stream construction period. We expect conditions to return to normal shortly after stream restoration activities are complete. Empire's implementation of its Plan and Procedures would minimize any potential impacts on waterbodies as a result of erosion and sedimentation. The potential effects from spills of petroleum products or hazardous materials used during construction would be minimized by Empire's SPCC Plan which contains measures for containment and cleanup of inadvertent releases. For the reasons above, we conclude impacts on surface waters from construction of the Project would not be significant.

Table 7: Waterbodies Crossed by the Project

Approximate Milepost	Width (feet)	Waterbody Name	Waterbody Type	State Water Quality Classification¹	Fishery Type²	Crossing Method³
0.34	3	Unnamed	Intermittent	C	Coldwater	Open Cut/ Dry Crossing
1.45	5	Mud Lick Creek	Perennial	C	Coldwater	Open Cut/ Dry Crossing
1.46	3	Mud Lick Creek	Perennial	C	Coldwater	Open Cut/ Dry Crossing
2.43	2	Unnamed	Intermittent	C	Coldwater	Open Cut/ Dry Crossing
3.27	3	Unnamed	Intermittent	C	Coldwater	Open Cut/ Dry Crossing
3.73	9	Unnamed	Perennial	C	Coldwater	Open Cut/ Dry Crossing
4.90	2	Unnamed	Intermittent	C	Coldwater	Open Cut/ Dry Crossing
5.91	3	Unnamed	Intermittent	C	Coldwater	Open Cut/ Dry Crossing
6.95	5	Culvert	Intermittent	C	Coldwater	Open Cut/ Dry Crossing
7.56	2	Unnamed	Intermittent	C	Coldwater	Open Cut/ Dry Crossing
8.58	3	Unnamed	Intermittent	C	Coldwater	Open Cut/ Dry Crossing
9.46	22	Whisky Creek	Perennial	C	Coldwater	HDD
9.52	300	Chemung River	Perennial	C	Warmwater	HDD
10.61	2	Unnamed	Intermittent	-	Coldwater	Open Cut/ Dry Crossing
11.77	2	Unnamed	Intermittent	-	Coldwater	Open Cut/ Dry Crossing
12.04	2	Unnamed	Intermittent	-	Coldwater	Open Cut/ Dry Crossing
12.14	5	Gorton Creek	Perennial	C	Coldwater	Open Cut/ Dry Crossing

¹ Designated by NYSDEC. Classification C is representative of waters supporting fisheries and suitable for non-contact activities.

² Designated by NYSDEC.

³ A dry-ditch method would be used if water is flowing at the time of construction (except for two proposed HDDs).

Hydrostatic Test Water

Approximately 2,155,000 gallons of water would be used for hydrostatic testing of Project facilities. Table 8 provides a listing of hydrostatic test water volumes and proposed water sources for the respective project sections. Hydrostatic test water would be obtained from a municipal source or an existing quarry pond near MP 9.25 of the Tioga County Extension Section. Empire would be required to secure permits from the Susquehanna River Basin Commission (SRBC) to withdraw water from either source. Hydrostatic test water for the other facilities would be obtained from municipal sources or trucked in.

Table 8: Hydrostatic Test Water Requirements		
Project Section	Approximate Volume (gallons)	Water Source
Tioga County Extension – Mainline Hydrostatic Test	1,900,000	Quarry Pond at MP 9.25/ Municipal Hydrant at MP 9.7
Tioga County Extension – Chemung River HDD Pre-test	60,000	Quarry Pond at MP 9.25/ Municipal Hydrant at MP 9.7
Lift and Lay Section	170,000	Municipal/ Trucked in
TGP Interconnect Meter Station	20,000	Municipal/ Trucked in
Oakfield Compressor Station	5,000	Municipal/ Trucked in
Total	2,155,000	

Upon completion of hydrostatic testing, water would be properly discharged to a well vegetated upland area per state and federal regulations or discharged back into the quarry pond (per landowner approval). Water would be discharged at a rate so as not to cause scouring. Water discharged into upland areas would be directed to a silt fence and hay bale containment structure in a well-vegetated area. A splash plate or other energy dissipating device would be used to diffuse the impact of the water as it is being discharged.

Discharge of the volumes used to test the Tioga County Extension Section is not expected to reach the nearest waterbody as it is approximately 0.5 mile south of the discharge location. If a municipal water source is used for hydrostatic test water, it would be tested for residual chlorine concentrations before being discharged. All hydrostatic test discharge activities would be performed in accordance with Empire's Plan and Procedures, and applicable permit requirements.

2.3 Wetlands

The project area contains palustrine forested, palustrine emergent, and palustrine scrub/shrub wetlands. Palustrine forested wetlands are dominated by woody vegetation that is at least 20 feet tall. Forested wetlands provide a diverse assemblage of plant species, a variety of distinctive strata, and an abundance of food and water sources for wildlife species. Palustrine emergent wetlands are characterized by erect,

rooted, herbaceous hydrophytes, excluding mosses and lichens. Palustrine scrub/shrub wetlands are dominated by woody vegetation less than 20 feet tall.

Construction of the Project would temporarily disturb 10.93 acres of wetlands (see table 9). No wetlands would be impacted by construction of aboveground facilities. Approximately 5.38 acres of forested wetlands would be temporarily disturbed by construction, of which approximately 0.67 acre would be permanently converted to emergent or scrub/shrub wetlands during operation of the Project. Forested wetlands that are outside of the permanently-maintained right-of-way would be allowed to return to their previous condition after construction. There would be no net loss of wetlands as a result of Project construction or operation.

Modification to Our Procedures

Empire proposes a modification of the FERC Procedures (section VI.B.1.a) for an ATWS within 50 feet of Wetland #7 at approximate MP 3.2. Empire states that the ATWS is required for additional spoil storage, pipe fabrication, and equipment workspace needed for the Riley Hill Road crossing. Wetland #7 is close to the north side of Riley Hill Road. A 25' x 110' ATWS area is proposed on the east side of the pipeline right-of-way and a 25' x 70' ATWS area is proposed on the west side of the pipeline right-of-way. These two ATWS areas are 10 feet from the wetland boundary in a forested area. At the completion of construction, the ATWS area would be allowed to revert to its prior use.

We believe the ATWS is necessary for Empire to cross Riley Hill Road and there are no feasible alternative locations. Empire would minimize impacts on the wetland by installing erosion/sediment control structures at the ATWS boundary to ensure that no sedimentation occurs in the wetland from the ATWS use. Therefore, we believe the proposed modification is acceptable.

Empire would minimize long-term impacts by crossing all wetlands in accordance with its Plan and Procedures by necking down the construction right-of-way within wetlands, using trench breakers as necessary to maintain the wetland hydrology, and seeding to ensure wetland stabilization until revegetation is successful. Emergent and scrub/shrub wetland habitats would be returned to their pre-construction conditions. Additional mitigation for forested wetland impacts may be required and would be developed by Empire as part of the USACE Section 404 permitting process. With implementation of Empire's proposed wetland impact minimization and mitigation measures, we believe that Project wetland impacts would not be significant.

Table 9: Wetlands Crossed by the Project

Milepost	Type	Pipeline Crossing Length (feet)	Temporary Impact (acres)¹	Permanent Impact (acres)
Tioga County Extension Section				
0.04	PEM/ PSS	318	0.53	0.36
0.34	PEM	27	0.04	0.03
1.46	PSS	102	0.17	0.02
2.39	PSS/ PEM	392	0.67	0.44
2.55	PEM	25	0.08	0.03
2.84	PEM	122	0.15	0.13
3.06	PFO/ PSS/ PEM	582	0.98	0.09 PFO/PSS 0.57 PEM
3.20	PFO	644	1.08	0.15
3.44	PFO	42	0.05	0.01
4.79	PFO	660	1.17	0.15
5.87	PSS/ PEM	0 ²	<0.01	<0.01
5.90	PFO	144	0.24	0.03
6.76	PFO	26	0.06	<0.01
6.96	PEM/ PSS	200	0.18	0.04
7.06	PEM	0*	0.02	0.02
7.12	PEM	87	0.08	0.08
7.49	PEM	53	0.09	0.08
7.57	PSS	157	0.26	0.04
8.48	PFO	689	1.16	0.16
8.65	PSS	125	0.18	0.03
9.41	PEM	0	0.00	0.00
10.60	PFO	283	0.64	0.07
10.63	PEM	0*	0.05	0.00
11.21	PEM	36	0.03	0.03
11.24	PSS	116	0.17	0.03
11.80	PEM	166	0.24	0.19
13.18	PEM/ PSS	260	0.51	0.06
13.54	PEM	378	0.70	0.50

Table 9: Wetlands Crossed by the Project				
Milepost	Type	Pipeline Crossing Length (feet)	Temporary Impact (acres)¹	Permanent Impact (acres)
14.25	PEM	0	0.04	<0.01
Lift and Lay Section				
0.18	PEM	160	0.17	0.17
1.21	PEM	655	1.19	1.19
TOTAL (acres)			10.93	4.73
PEM = palustrine emergent, PSS = palustrine scrub/shrub, PFO = palustrine forested ¹ Temporary impact includes construction and permanent pipeline right-of-way and ATWS. ² Wetland is not crossed by the pipeline centerline, but is affected by temporary workspace.				

3.0 VEGETATION, WILDLIFE, AND FISHERIES

3.1 Vegetation

Vegetation types in the Project area include urban/industrial, agricultural, upland pasture, woodland, upland scrub/shrub, and palustrine wetlands. Vegetation impacts are summarized in table 10.

The Project area consists mainly of agricultural fields and woodlands. No unique, sensitive, or protected vegetation types or plant communities have been identified in the Project area. Some agricultural fields would be impacted due to aboveground facilities; these tracts would be permanently converted to industrial (natural gas operations) use. In woodlands, temporary work areas required for construction would be allowed to revegetate to pre-construction conditions. Woodland areas within the permanent right-of-way would be maintained in an herbaceous or shrub/scrub condition during operation of the pipeline. Empire would implement the measures in its Plan, including seeding after construction and monitoring the disturbed areas until revegetation is successful. Empire's Plan would allow herbaceous vegetation to quickly return to pre-construction conditions on the right-of-way (from less than 1 to 2 years). Therefore, we believe Project impacts on vegetation would not be significant.

The NYSDEC requested that Empire prepare an Invasive Species Management Plan to control certain species that are known to occur in the Project area. Several species were identified that are known to colonize disturbed areas and pose the greatest ecological risk. These species include common reed, black or pale swallowwort, Japanese knotweed, and purple loosestrife. The NYSDEC stated that some of these species may already be present along the construction right-of-way. Empire has committed to preparing an Invasive Species Management Plan that is site- or crossing-specific. In addition, a pre- and post-construction monitoring plan would be developed to track new infestation of these species along the construction right-of-way for two years after construction.

Table 10: Vegetation Impacted by the Project		
Habitat Type/Name	Area Affected	
	Construction (Temporary Acres Impacted)	Operation (Permanent Acres Impacted)
Agricultural – Crop	31.73	8.57
Agricultural – Pasture	83.07	36.88
Woodland	68.62	40.41
Upland Scrub/Shrub	14.21	8.11
Urban/Industrial Turf	11.37	5.12
Residential	6.15	3.06
Wetlands	10.93	4.73
Open Water	0.00	0.25 ¹
Total	226.08	107.13
¹ There would be no construction impacts in the Open Water category due to the HDD crossing under the Chemung River. Open Water operational acreage is based on the permanent easement across the Chemung River.		

3.2 Wildlife

Based on the results of the field survey and a desktop review of topographic maps and aerial photographs, the Project area has been divided into general community types. These habitat types include urban/industrial, agricultural land, upland pasture, woodland, upland scrub/shrub, and palustrine wetlands.

To minimize construction-related impacts on wildlife habitats, Empire would implement its Plan and Procedures. Empire's Plan and Procedures would minimize impacts on wildlife resources by revegetating all disturbed areas after construction is complete and allowing the temporary right-of-way to return to pre-construction conditions. Empire would be required to adhere to vegetative maintenance practices outlined in its Plan for the permanent right-of-way during operation of the Project. Project operation would not significantly impact wildlife because most Project components would be below ground.

Mobile species, such as most birds and larger mammals, would be expected to move out of the specific Project area once construction activity commenced. Such wildlife may temporarily or permanently relocate to suitable adjacent habitat. Smaller species and less mobile individuals could be unintentionally killed by construction equipment. Areas adjacent to the proposed Project workspace provide similar and ample habitats for wildlife displaced temporarily during and permanently after construction of the proposed facilities. Areas temporarily disturbed by construction would be allowed to revegetate, thus restoring the pre-construction structure and function of affected habitat types. Given the nature of the Project construction activities, Empire's commitment to restoring the right-of-way, and the availability of

similar habitat in the general Project area, we believe the Project would not have a significant adverse impact on the region's wildlife.

Migratory Birds

The Migratory Bird Treaty Act of 1918 (MBTA), as amended, prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. In addition, Executive Order 13186 (EO 13186) was enacted in 2001 to, among other things, ensure that environmental analyses of federal actions evaluate the effects of actions and agency plans on migratory birds. Several elements of the MBTA and EO 13186 are relevant to the Empire Project, and are discussed below.

Currently, Empire plans to begin construction of the Project in March 2011 and complete construction in August 2011. As a result, most Project construction activities would occur during the nesting season for migratory birds (generally April 1-August 31). Thus, direct and indirect impacts on migratory birds could result from construction. Examples of potential impacts include habitat loss, disruption of foraging adults, and abandonment or destruction of active nests.

EO 13186 states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and that particular focus should be given to addressing population-level impacts. Although birds of conservation concern (e.g., bald eagle, red-headed woodpecker, black-capped chickadee, sedge wren, wood thrush, and the Canada warbler) occur in the general Project vicinity, the FWS has indicated that there are no migratory birds of special concern along the Project route (FWS, 2010a, 2010b). Further, Empire has committed to following guidance documents including the Bald and Golden Eagle Protection Act and Bald Eagle Management Guidelines and Conservation Measures if bald eagles are discovered in the Project area. The NYSDEC stated in a letter dated October 18, 2010, that it recommends following these guidelines for the bald eagle (which is a state-listed threatened species). Based on the above, we conclude it is unlikely that any migratory birds of special concern would be significantly impacted by construction activities.

This EA also discusses several plans (e.g., Empire's Plan, Procedures, ESCAMP, and SPCC Plan) that would reduce the extent and duration of impacts on migratory bird habitat, actively and naturally allow a great majority of the construction right-of-way to return to pre-construction condition, and limit the potential effects from spills or environmental contamination. Further, because about one-half of the Project disturbance would occur in agricultural lands and abundant similar habitats exist adjacent to the proposed Project workspace and throughout the Project vicinity, impacts on high-quality (e.g., forested or riparian) migratory bird habitat in the area would be minor.

EO 13186 also requires the federal agency to identify where unintentional "take" (i.e., the unintended death, harm, or harassment) is likely to have a measurable negative effect on migratory bird populations. We believe that adult birds relocating to avoid construction is an impact of limited duration that would not result in a substantial or long-term change in migration patterns through the area nor constitute a population-level impact.

Destruction of nests presents a more complex situation. As directed by the executive order, special emphasis should be given to species of concern (which, as discussed above, would not likely be impacted). Effects to tree-dwelling birds are possible in the forested areas crossed by the Project.

However, direct effects to non-sensitive birds (i.e., those not on special conservation lists or which do not have significantly reduced populations) and loss of nests, while possible, would likely not result in long-term or significant population-level impacts, given the stability of local bird populations.

During operation of the Project, vegetative maintenance clearing would occur outside of the nesting season in accordance with Empire's Plan.

For the reasons listed above, we believe that the proposed Project would not significantly affect migratory bird species within the Project area.

3.3 Fisheries

Seventeen waterbodies are present within or adjacent to the proposed Project area. There are no waterbody crossings on the Tioga County Extension Section in Tioga County, Pennsylvania (all occur in New York) or the Lift and Lay Section and TGP Interconnect Meter Station in Ontario County, New York. Additional information about the waterbodies crossed by the Project can be found in section B.2.

The Project area supports both warmwater and coldwater fisheries. Representative fish species in coldwater fisheries include brown trout, rainbow trout, yellow perch, and common shiner. Warmwater fisheries in the Project area include species such as northern pike, walleye, and pumpkin seed. Other than the Chemung River, which would be crossed using HDD, all impacted streams have a Stream Classification "C", with no known sport fishing resources. Stream Classification "C" is representative of waters supporting fisheries and suitable for non-contact activities. The FWS and New York State Natural Heritage Program (NYSNHP) did not identify any fisheries of special concern crossed by the proposed route.

All of the waterbodies crossed by the Project, with the exception of the Chemung River, are coldwater fisheries. The Chemung River, a warmwater fishery, would be crossed by HDD along with Whisky Creek. However, all other waterbodies with perceptible flow at the time of crossing would be crossed using dry-ditch construction techniques. According to Empire's Procedures, all waterbodies supporting coldwater fisheries must be crossed between June 1st and September 30th unless otherwise restricted or permitted by the appropriate state agency. Implementation of the protective measures in the Procedures such as temporarily diverting stream flow around the work area, installing sediment barriers at waterbody crossings, and restoring waterbody banks to pre-construction condition would minimize adverse impacts on fisheries such as sedimentation, turbidity, and the loss of stream cover.

3.4 Special Status Species

Special status species are those species for which state or federal agencies provide an additional level of protection by regulation, law, or policy. Included in this category are federally listed species that are protected under the Endangered Species Act or are considered as candidates for such listing by the FWS, those species that are state-listed threatened or endangered, or other designated species of special concern.

Empire used the online Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review and Project Planning tool to identify potential rare species in the vicinity of the proposed pipeline route and Project facilities in Pennsylvania. No rare species were identified by the Pennsylvania Department of

Conservation and Natural Resources, Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, or the FWS. Consultation was also conducted with the NYSNHP by requesting information on the potential impact on rare species for each Project component in New York. Five state-listed threatened species were identified as potentially occurring in the Project area in Steuben County, New York. One state-listed threatened species was identified as potentially occurring in the vicinity of the Lift and Lay Section in Ontario County, New York. No federally or state-listed species were identified in the vicinity of the TGP Interconnect Meter Station. Table 11 lists the special status species potentially occurring in the Project area.

There are no federally listed species known to occur within the Project area. Given that there would be *no effect* on federally listed species, no further consultation under Section 7 of the Endangered Species Act is necessary.

Table 11: Special Status Species			
Common Name	Scientific Name	Status	Survey Window
Tioga County Extension Project, Steuben County, New York			
Green floater	<i>Lasmigona subviridis</i>	NY State Threatened	Summer
Yellow lampmussel	<i>Lampsilis cariosa</i>	NY State Threatened	Summer
Timber rattlesnake	<i>Crotalus horridus</i>	NY State Threatened	Spring-Fall
Wild nodding onion	<i>Allium cernuum</i> var. <i>cernuum</i>	NY State Threatened	Flowers June - August
Bald eagle	<i>Haliaeetus leucocephalus</i>	NY State Threatened	N/A
Lift & Lay Section, Ontario County, New York			
Twin-leaf	<i>Jeffersonia diphylla</i>	NY State Threatened	Summer

Green Floater and Yellow Lampmussel

The green floater is a small mussel species often found in small creeks, large rivers, and sometimes in canals with slow moving waters. Its preferred substrate is gravel and sand in 1 to 4 feet of water. This species is known to occur in the Susquehanna, Ohio, and Delaware River drainages. Historically, this species was widespread within the Susquehanna River Basin in New York.

The yellow lampmussel is a medium-sized freshwater mussel species identified by its bright yellow color. It is found in medium to large rivers with a variety of substrate types including sand, silt, cobble, and gravel. It is relatively abundant in the Susquehanna River Basin.

The NYSDEC identified the Chemung River as potential habitat for the state-listed threatened green floater and yellow lampmussel. Based on Empire's proposed HDD crossing of the Chemung River, the NYSDEC has confirmed that mussel surveys in the Chemung River are not required (NYSDEC, 2010). However, as requested by the NYSDEC, Empire provided additional information on the tributaries of the Chemung River that would be crossed, as well as Empire's proposed crossing methods. Based on

characteristics of the tributaries and their distance from the Chemung River, Empire's habitat survey concluded that it is unlikely that there would be any impact on these mussel species from construction activities. In a letter dated October 18, 2010, the NYSDEC stated that based on its inspection of the tributaries crossed by the Project, there would be no impact on state-listed mussel species.

Timber Rattlesnake

The timber rattlesnake is a large, stocky, venomous member of the pit viper family which inhabits deciduous forests with rugged terrain. In New York, timber rattlesnakes are found in isolated populations in southeastern New York, the Southern Tier, and in the peripheral eastern Adirondacks.

No timber rattlesnakes were observed during Empire's July 15, 2010 surveys; however, suitable foraging habitat was identified. Empire would employ a timber rattlesnake specialist to screen the right-of-way immediately prior to construction activities and/or have a rattlesnake expert either on-call or on-site during construction. After the monitor has checked the area, he/she would be on call for the remainder of the day to safely remove and relocate any timber rattlesnakes that are later encountered. All Empire employees and contractors would be trained by the monitor on what to do should a timber rattlesnake be encountered during construction. All actions taken by the snake monitor would be reported to the NYSDEC contact within 48 hours of any encounter. The NYSDEC finds this monitoring plan for timber rattlesnakes acceptable.

Wild Nodding Onion

The wild nodding onion is a flowering perennial plant with grasslike leaves and a single leafless stalk. The stem of the plant bends so that the pink flowers nod towards the ground. The plant is named for its mild, onion-like scent. This species is known to occur in dry to moist prairies, stream banks, and moist areas at high altitudes. It prefers full sunlight along south facing, rocky slopes.

On July 15, 2010, Empire conducted a wild nodding onion habitat survey of the Project areas identified by the NYSDEC. Most of the two miles surveyed consisted of gentle rolling hills with some low-lying areas. The survey team did not identify any wild nodding onion or suitable habitat. Based on the survey results, the NYSDEC concurred that the Project would not impact the wild nodding onion.

Bald Eagle

The bald eagle is a large raptor found primarily near coasts, rivers, and large lakes. It nests in tall trees or on cliffs near water. Although this species is no longer a federally listed species, it is listed as threatened by the State of New York. There is no suitable nesting or roosting habitat present in the Project area; however, the potential exists for bald eagles to venture into the Project area. Additional information about potential impacts on migratory birds is found in section B.3.2.

Twin-leaf

The twin-leaf is a perennial spring wildflower that upon flowering has stems approximately 8 inches high and small two-lobed leaves that look like butterfly wings. This plant grows in colonies with hundreds to thousands of individuals. Typical habitat is near the base of slopes adjacent to waterbodies.

The NYSDEC stated in its May 7, 2010 correspondence to FERC that the twin-leaf has been identified in the Town of Perinton (Monroe County), which is north of the Lift and Lay Section. NYSDEC advised Empire to perform a review of literature and conduct an onsite survey of the area to determine if habitat for the twin-leaf is present. Empire assessed the entire Project route and determined there is no habitat present to potentially support the growth and presence of twin-leaf. The NYSDEC stated in correspondence dated July 29, 2010, that there would be no adverse impacts on the twin-leaf based on the survey results submitted by Empire.

4.0 LAND USE, RECREATION, AND VISUAL RESOURCES

Six primary land use categories would be affected by the proposed Project: agricultural (crop and pasture), woodland, open water, wetlands (emergent, scrub/shrub, and forested), upland scrub/shrub, and developed land (residential and industrial). Land use acreages affected by Project construction and operation are provided in table 12.

Project construction would affect 10.93 acres of wetlands. Of the 10.93 acres of wetland disturbed, no land would be lost to permanent aboveground facilities. Approximately 0.67 acre of forested wetland would undergo conversion to emergent or scrub/shrub wetlands and be maintained as permanent pipeline right-of-way.

Agricultural land accounts for 114.80 acres, or 51 percent, of the Project's overall disturbance area of 226.08 acres. After construction, almost all (113.10 acres) of the disturbed agricultural land would revert to its former land use, while the remaining 1.70 acres would undergo permanent conversion to industrial land for the TGP Interconnect Meter Station site. Landowners would be able to continue previous agricultural practices on land within permanent pipeline right-of-way.

Developed land in the Project vicinity includes industrial and residential land. Construction would impact 17.52 acres of developed land, of which 8.18 acres would be maintained as permanent right-of-way. No developed land would be permanently impacted by the aboveground facilities. Impacts on residential areas would be minimized as discussed below.

Empire would utilize existing public and private roads during Project construction and operation. Residents in the Project area may experience periods of increased traffic on local roads during construction. However, given the rural Project setting, the availability of short alternative routes and the episodic nature of equipment and materials deliveries, construction-related traffic would not have a significant impact on area residents or others who utilize local roads.

Existing roads on the Tioga County Extension Section and Lift and Lay Section would be crossed by open-cuts, bores, or HDDs. Bore and HDD crossings would result in minimal disruption of traffic. Any roads damaged by Empire would be repaired to their pre-construction condition. Empire would also abide by road weight and seasonal travel restrictions. Project facilities would not be manned by permanent workers, therefore, there would be minimal impact on the local road system during facility operation.

The Project would not affect any of the following designated land types or resources: state wild and scenic rivers; state- or locally-designated trails; nature preserves; game management areas; national or

state forests; federal, state, or local parks; designated natural, recreational or scenic areas; registered natural landmarks; Native American reservations; or wilderness areas.

Table 12: Acreage Affected by Construction and Operation

Land Use		Tioga County Extension Section	Aboveground Facilities Tioga County Extension Section	Lift and Lay Section	Aboveground Facilities Lift and Lay Section	TGP Interconnect Meter Station	Oakfield Compressor Station	Project Totals
Agricultural - Crop	Construction ¹	24.14	2.06	5.53	-	-	-	31.73
	Operation	4.88	2.06	1.63	-	-	-	8.57
Agricultural - Pasture	Construction	80.94	-	-	-	2.13	-	83.07
	Operation	35.18	-	-	-	1.70	-	36.88
Woodland	Construction	65.40	0.87	2.35	-	-	-	68.62
	Operation	38.22	0.62	1.57	-	-	-	40.41
Upland Scrub/Shrub	Construction	10.07	0.31	3.58	0.25	-	-	14.21
	Operation	5.97	0.31	1.83	-	-	-	8.11
Industrial	Construction	6.89	-	1.61	0.83	-	2.04	11.37
	Operation	2.54	-	0.21	0.83	-	1.54	5.12
Residential	Construction	²	-	5.90	0.25	-	-	6.15
	Operation	-	-	3.06	-	-	-	3.06
Wetlands	Construction	10.93	-	-	-	-	-	10.93
	Operation	4.73	-	-	-	-	-	4.73
Open Water	Construction	-	-	-	-	-	-	0.00
	Operation	0.25 ³	-	-	-	-	-	0.25
TOTALS	Construction	197.44	3.24	19.90	1.33	2.13	2.04	226.08
	Operation	90.84	2.99	9.23	0.83	1.70	1.54	107.13

¹ Construction impacts include disturbance to areas within the construction right-of-way, ATWS, access roads, and staging areas. Operational impacts represent impacts associated with permanent right-of-way, access roads, and new aboveground facilities. Detailed ATWS listings are provided in appendix B.

² Two residential areas are crossed by the Tioga County Extension Section. These areas were not included in the Residential acreage impact due to different land use mapping designations.

³ There would be no construction impacts in the Open Water category along the Tioga County Extension Section due to the HDD crossing under the Chemung River. Listed Open Water operational acreage is based on the permanent easement across the Chemung River.

Most visual and aesthetic impacts associated with the Project would be limited to the period of active construction, in which the landscape would be characterized by areas of cleared or flattened vegetation, trench and foundation excavation, grading, and spoil storage. Equipment and vehicles would move around the Project area, construction materials would be transported to the site, and facility structures

would be erected. Aesthetic impacts may include elevated noise and dust associated with the use of construction equipment. These construction-related visual and aesthetic impacts would be temporary and would decrease with distance from areas of active construction.

The contours along the pipeline rights-of-way would be restored to near pre-construction conditions following backfilling. The visual impact of the new right-of-way associated with the Tioga County Extension Section would decrease over time as vegetation becomes reestablished. The only permanent visual changes would involve cleared permanent pipeline right-of-way in forested areas, the installation of pipeline markers, and the proposed aboveground facilities. Because the Lift and Lay Section would be within Empire’s existing pipeline right-of-way, vegetation removal for the pipeline replacement would be minimal and would not have a significant impact on the existing visual or aesthetic quality of the local landscape.

The new aboveground facilities would be located in sparsely populated areas and would be set back from the road to minimize visual impacts. The aboveground facilities would not be prominent in terms of height or coloration; therefore, we believe that the visual impacts would be minimal.

We do not believe that the proposed Project would have significant, long-term impacts on land use, recreation, and visual resources.

4.1 Nearby Residences and Structures

There are three residences within 50 feet of the proposed construction workspace (see table 13). Two of these residences (Tioga County Extension Section MP 13.3 and Lift and Lay Section MP 0.14) are located within 25 feet of the proposed construction workspace. Empire has developed Residential Mitigation Plans specifically for the two residences located within 25 feet of the proposed construction workspace. The Residential Mitigation Plans would utilize additional construction restrictions and/or mitigative measures (e.g., restricting the construction right-of-way width). These plans are included as appendix E. We are specifically requesting landowners to review these plans and provide us with any comments.

Table 13: Existing Residences Within 50 Feet of Construction Workspaces						
Project Component	County, State	MP	Description of Structure	Distance from Pipeline Centerline (feet)	Distance from Construction Workspace (feet)	Offset Direction
Tioga County Extension Section	Steuben County, NY	12.48	Residential/Home	98	48	East
	Steuben County, NY	13.30	Residential/Home	94	19	East
Lift and Lay Section	Ontario County, NY	0.14	Residential/Home	51	16	South

Empire’s proposed Tioga County Extension Section right-of-way near the residence at MP 12.48 is limited to a width of 75 feet and avoids clearing forested land immediately west of the proposed

alignment. Just north of this residence, the pipeline is adjacent to and east of an existing Texas Eastern Products Pipeline Company (TEPPCO) pipeline at the residence near MP 13.3. The residence at this location is east of Empire's proposed pipeline alignment and the proposed ATWS required for the County Route 45 road bore is within 19 feet of the residence. For safety reasons, Empire designed its ATWS configuration at this location to avoid working over the existing TEPPCO pipeline. Empire is replacing its existing pipeline along the Lift and Lay Section, which reduces the opportunity to relocate the pipeline to increase the distance from the residence at MP 0.14. In addition, there is another existing pipeline aligned immediately north of Empire's pipeline alignment at this location, which further reduces the feasibility of relocating the proposed pipeline and workspace. After reviewing Empire's proposed right-of-way and Residential Mitigation Plans, we believe that Empire has adequately minimized the impacts on these residences within the available workspace.

Empire would coordinate with residence owners and/or tenants prior to construction activities occurring inside a residential mitigation area. Additional safety precautions include erecting barricades (e.g., standard orange barricade fencing), welding the pipeline off-site, controlling fugitive dust, and reducing the duration of the open trench.

For all residences, homeowners would be notified in advance of construction activities and any scheduled disruption of utilities. Disruptions would be minimized to the maximum extent practicable. Should any Project-related work activity in the residential area disrupt ingress and egress to the affected areas, Empire would offer to either temporarily relocate the landowner to a motel and provide a meal allowance or provide alternative access to their property. In addition, Empire would attempt to leave any mature trees and landscaping intact within the construction work area unless the trees and landscaping interfere with installation techniques or present unsafe working or operational conditions. Fences, mailboxes, and other structures that have been removed would be restored. Sidewalks, driveways, and roads would be restored as soon as practicable. After cleanup, an Empire representative would contact landowners to ensure that conditions of all landowner agreements have been met.

A residential sub-division is currently being constructed adjacent to the Lift and Lay Section. Empire does not anticipate the construction of new homes within 50 feet of the proposed workspace.

4.2 Landfill and Hazardous Waste Sites

There are no operating or abandoned landfill facilities within a 0.5 mile of the proposed Project. Several hazardous waste sites were identified within 0.5 mile of the Tioga County Extension Section and Lift and Lay Section. All historical spill sites that were identified have been closed. Cleanup has been initiated or completed on all sites. There are no hazardous waste sites within a half mile of the proposed TGP Interconnect Meter Station. Table 14 includes a summary of the hazardous materials database search.

Construction of the Tioga County Extension Section and replacement of the Lift and Lay Section would not impact any of the identified hazardous waste sites.

Table 14: Hazardous Materials Database Search Results

Database(s)¹	Facility/Owner	Violations Reported	MP²	Distance from Construction Work Areas (miles)	Direction from Construction Work Areas
Tioga County Extension Section					
RCRAGN	FAA Vor Site Ulw	N	7.11	0.31	SW
RCRAGN	Millennium Corning Compressor Station	N	14.83	0.36	NE
RCRAGN	Columbia Gas Transmission - Corning Compressor	N	14.83	0.36	NE
SPILLS	Carl Knool Property	N	13.27	0.09	SE
SPILLS	Ed Stratton Property	N	11.55	0.11	NW
SPILLS	Carpenter Pond Fishkill	N	4.68	0.19	SE
SPILLS	11022 River Road	N	9.47	0.32	NW
SPILLS	Steven Clark Property	N	5.67	0.33	SW
SPILLS	Compressor Station	N	13.27	0.36	NE
SPILLS	Corning Compressor Station	N	13.27	0.36	NE
SPILLS	School Bus Garage	N	12.70	0.37	SE
SPILLS	Corning Painted Post Central School District	N	12.70	0.37	SE
SPILLS	Reynolds Residence	N	14.80	0.50	NE
UST	Gross	N	14.79	0.06	SE
UST	Hartman	N	14.57	0.08	NW
UST	Dennis	N	4.59	0.19	SE
UST	Corning-Painted Post	Y	12.89	0.37	SE
UST	Stuart Well	N	8.83	0.49	NE
Lift and Lay Section					
RCRAGN	Home Depot	N	0.00	0.25	SW
LUST	Wendell Residence	N	0.20	0.28	SE
LUST	Victor Historical Society	N	0.30	0.43	NW
SPILLS	Jay Wendell Residence	N	0.20	0.28	SE
SPILLS	Schneider Residence	N	1.10	0.37	NW

Table 14: Hazardous Materials Database Search Results

Database(s) ¹	Facility/Owner	Violations Reported	MP ²	Distance from Construction Work Areas (miles)	Direction from Construction Work Areas
SPILLS	Highpoint Business Park	N	0.00	0.43	NW
SPILLS	Valentown Road/Route 96	N	0.00	0.43	NW
SPILLS	Victor Historical Society	Y	0.05	0.43	NW
SPILLS	Residence	N	0.80	0.46	NE
¹ RCRA = Resource Conservation and Recovery Act/Generator UST = Underground Storage Tank LUST = Leaking Underground Storage Tank SPILLS = Area of release or discharge of contaminants or pollutants that meet or exceed certain thresholds VCP = Voluntary Cleanup Program Sites List ² Milepost represents the location along the pipeline route.					

5.0 CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act (NHPA), as amended, requires the FERC to take into account the effects of its undertakings on properties on or eligible for listing on the National Register of Historic Places (NRHP) and to afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. Empire, as a non-federal party, is assisting us in meeting our obligations under section 106 and the implementing regulations at 36 CFR 800.

Empire has conducted cultural resources surveys for the proposed facilities, including all aboveground structures, pipeline rights-of-way, pipeyards, temporary work areas, and access roads. Survey methods include shovel testing and surface collection. Deep testing was done in the vicinity of the Chemung River. In total, approximately 413 acres were surveyed, 12.2 acres in Pennsylvania and 400.8 acres in New York. Empire has provided cultural resources survey reports to the FERC and Pennsylvania and New York State Historic Preservation Offices (SHPO). Archaeological survey of two segments of the pipeline totaling approximately 0.53 mile has not yet been undertaken due to access denial by the landowner. Additionally, two access roads were added late in Project development and have not been surveyed. All outstanding areas would be surveyed when access is acquired, and Empire would submit survey reports to the FERC and the New York SHPO.

Archaeological survey identified one historic period site in Pennsylvania and eight sites in New York, including three historic sites, two prehistoric sites, and three sites with prehistoric and historic components. Of these sites, two sites were recommended for avoidance or additional testing. Empire has relocated the Producer Meter Station in Pennsylvania in order to avoid Site 36Ti0150. The River Road Farm Precontact & Historic Site (A10108.000014) was identified within an extra workspace that Empire no longer plans to use. The New York SHPO commented on the report in a letter dated September 17, 2010. It recommended that the precontact component of NYF-Faulisi Historic Scatter and Precontact Site

(A10108.000015) is potentially eligible for listing on the NRHP. Empire has not yet indicated whether they would avoid or conduct additional testing for this site. We have not yet received survey comments from the Pennsylvania SHPO.

Empire has provided us with a plan to address the unanticipated discovery of cultural resources or human remains during Project construction, entitled “Unanticipated Discovery Plan – Cultural Resource Sites”. Along with the Phase I Report, this plan has been submitted to the Pennsylvania and New York SHPOs for review and comment. We find this plan acceptable.

Empire contacted the following 16 Native American Tribes with historic ties to the Project area, and provided them with information regarding the proposed Project: Absentee-Shawnee Tribe of Oklahoma, Cayuga Nation, Delaware Tribe of Indians of Oklahoma, Delaware Nation, Eastern Shawnee Tribe of Oklahoma, Oneida Indian Nation, Oneida Nation of Wisconsin, Onondaga Nation, Seneca Nation of Indians, Seneca Nation of New York, Seneca-Cayuga Tribe of Oklahoma, Saint Regis Mohawk Tribe, Shawnee Tribe, Stockbridge-Munsee Band of the Mohican Nation of Wisconsin, Tonawanda Seneca Nation, and Tuscarora Nation. The Seneca Nation of Indians requested copies of survey reports, which Empire provided. The Delaware Nation and the Oneida Indian Nation would like to be notified if any human remains or funerary objects are recovered. The Saint Regis Mohawk Tribe and the Stockbridge-Munsee Band of the Mohican Nation of Wisconsin indicated that they had no concerns about the Project. No other responses have been received. No concerns have been identified from local historic or preservation groups.

We have not yet completed the process of complying with section 106 of the NHPA. If any historic properties would be adversely affected by the Project, we would seek to resolve those impacts and provide the ACHP with an opportunity to comment. To ensure that the Commission’s responsibilities under the NHPA and its implementing regulations are met, **we recommend that:**

Empire should not begin construction of facilities and/or use of staging, storage, or temporary work areas and new or to-be-improved access roads until:

- a. **Empire files with the Secretary of the Commission (Secretary):**
 - (1) **remaining cultural resources survey report(s);**
 - (2) **site evaluation report(s) and avoidance/treatment plan(s), as required;**
 - (3) **comments on the cultural resources reports and plans from the Pennsylvania and New York SHPOs and any interested Indian tribes;**
- b. **The ACHP is afforded an opportunity to comment if historic properties would be adversely affected; and**
- c. **The FERC staff reviews and the Director of the Office of Energy Projects (OEP) approves the cultural resources reports and plans, and notifies Empire in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.**

All materials filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: “CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE.”

6.0 AIR QUALITY AND NOISE

6.1 Air Quality

The proposed Project would result in temporary and permanent impacts on regional air quality through both short-term construction activities associated with the Project and long-term operation of the new Tioga County Extension Project.

The U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for criteria pollutants to protect human health (primary standards) and public welfare (secondary standards). The EPA set NAAQS for the following air contaminants designated “criteria pollutants”: nitrogen dioxide (NO₂), carbon monoxide (CO), ozone (O₃), sulfur dioxide (SO₂), lead (Pb), particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM₁₀), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns (PM_{2.5}). The NAAQS reflect the relationship between pollutant concentrations and health and welfare effects and are supported by sound scientific evidence. The states are required to implement and enforce the NAAQS through State Implementation Plans (SIP), which are approved by the EPA. The State of New York implements its SIP through the NYSDEC; Pennsylvania implements its SIP through the PADEP.

Air quality control regions (AQCR) are areas established for air quality planning purposes in which SIPs describe how ambient air quality standards would be achieved and maintained. AQCRs were established by the EPA and local agencies, in accordance with section 107 of the Clean Air Act of 1970 and its amendments (CAA), as a means to implement the CAA and comply with the NAAQS through SIPs. The CAA is the basic federal statute governing air pollution. AQCRs are intra- and interstate regions, such as large metropolitan areas, where improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Each AQCR, or portion thereof, is designated based on compliance with the NAAQS. AQCR designations fall under three categories as follows: “attainment” (areas in compliance with the NAAQS), “non-attainment” (areas not in compliance with the NAAQS), or “unclassifiable/ attainment” (areas that cannot be classified on the basis of available information as meeting or not meeting the NAAQS). Areas in non-attainment with the NAAQS for any criteria pollutant are held to more restrictive air emissions limits when determining whether the facility is a major source under federal programs.

The states of New York and Pennsylvania are included in the Northeast Ozone Transport Region (OTR). An OTR is an area where the transport of ground-level ozone from one or more states contributes significantly to a violation of the NAAQS in one or more other states.⁴ Ozone forms when there is a reaction between nitrogen oxides (NO_x) and volatile organic compounds (VOC). Because ozone is not an emitted pollutant, ozone formation cannot be directly controlled. Limiting NO_x and VOC emissions would result in a lower potential for ozone formation. Genesee and Ontario Counties, New York are within the Genesee – Finger Lakes AQCR and are in attainment with the NAAQS. Steuben County, New York is within the Southern Tier West Intrastate AQCR and is designated as unclassifiable/attainment with the NAAQS. Tioga County, Pennsylvania is within the NE Pennsylvania

⁴ Title 42 of the United States Code, Chapter 85, Part D, Subpart 1, Section 7506(a).

Intrastate AQCR and is designated as unclassifiable/attainment with the NAAQS. Although the states of New York and Pennsylvania are in the Northeast OTR; all counties traversed by the Project are in attainment with the NAAQS for all criteria pollutants.

Greenhouse Gases

On September 22, 2009, the EPA issued the final Mandatory Reporting of Greenhouse Gases Rule. It requires reporting of greenhouse gas (GHG) emissions from suppliers of fossil fuels and facilities that emit greater than or equal to 25,000 metric tons⁵ of GHG per year. On June 3, 2010, the EPA tailored the applicability criteria for stationary sources and modification projects.⁶ This rule does not apply to construction emissions.

GHGs occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. These gases are the integral components of the atmosphere's greenhouse effect that warms the earth's surface and moderates day/night temperature variation. The primary GHGs produced by fossil fuel combustion are water, carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). During construction and operation of this Project, these GHGs would be emitted from non-electrical construction equipment and any compressors, line heaters, and generators. Emissions of GHGs are typically expressed in terms of CO₂ equivalents (CO₂e), where the potential of each gas to increase heating in the atmosphere is expressed as a multiple of the heating potential of CO₂, or its global warming potential (GWP).⁷ The GWP for N₂O (expressed as NO_x for the Project) is 310.

The combustion-related GHG emissions from construction of the Project would exceed 25,000 metric tons per year; however, these emissions would subside after construction activities are complete. Because there would be no GHG emissions associated with the operation of the Project facilities, Empire would not be subject to provisions in the Mandatory Reporting of Greenhouse Gases Rule.

Construction Impacts and Mitigation

Emissions associated with construction activities generally include: 1) exhaust emissions from construction equipment, 2) fugitive dust emissions associated with construction vehicle movement on unpaved surfaces, and 3) fugitive dust associated with trenching, backfilling, and other earth-moving activities. The exhaust emissions would depend on the equipment used and the horsepower-hours of operation. Table 15 shows the estimated construction and greenhouse gas emissions associated with the Project in tons per year (tpy).

During construction, Empire would apply fugitive dust control measures such as: 1) watering all affected unpaved roads, as necessary; 2) reducing vehicle speeds on unpaved roads; and 3) covering all haul truck loads or ensuring that haul truck cargo compartments are maintained to reduce spillage and loss of materials.

⁵ A metric ton is 2,205 pounds, or approximately 1.1 tons.

⁶ 75 Federal Register 31,514

⁷ The EPA uses the 100-year GWP in its analyses for GHGs, as listed in the Intergovernmental Panel of Climate Change's Second Assessment Report.

Table 15: Potential Construction Air Pollutant Emissions									
County	VOC	PM₁₀	PM_{2.5}	CO	NO_x	SO₂	CO₂	HAPs	Total Greenhouse Gases^{1, 2}
Genesee	0.1	0.5	0.2	0.8	1.1	0	132.7	0	473.7
Ontario	5.0	6.5	4.7	26.1	33.1	0.1	3,932.1	0.3	14,193.1
Steuben	11.7	16.6	11.0	60.0	73.0	0.2	8,327.3	0.8	30,957.3
Tioga	1.7	2.4	1.6	9.3	13.3	0.03	1,645.8	0.1	5,768.8
Subtotal	18.5	26.0	17.5	96.2	120.5	0.3	14,037.4	1.2	51,393.9
¹ GHG emissions are shown in tpy, which converts to 46,721 metric tons. ² Total GHG emissions include NO _x and CO ₂ . NO _x values were multiplied by its GWP.									

Merchantable timber may be limbed, cut, and either removed or windrowed along the pipeline rights-of-way. Timber that is not merchantable and other vegetative debris may be chipped or disposed according to applicable regulations. Stumps and other timber considered to be non-merchantable would be properly disposed of by cutting/chipping and/or following general local logging/clearing practices for non-burning disposal. Disposal of materials taken off-site would be done at commercial facilities or at other approved locations. Empire would avoid adverse air emission impacts due to burning any brush, slash, or materials generated from construction activities by complying with the regulatory prohibitions in Pennsylvania's Code of Rules and Regulations (PACRR) at 6 PACRR Part 215 and NYSDEC regulations. The NYSDEC has banned most forms of open burning, effective October 14, 2009. The PADEP's regional office of the Bureau of Air Quality advises to avoid burning brush whenever possible. If brush must be burned in a residential area and the municipality allows burning, then the PADEP regional office of the Bureau of Air Quality must be contacted to determine if approval is required. If approved and within an air basin, an air curtain destructor must be used and must be approved by the PADEP's Regional Air Quality Program office.

Emissions associated with construction-related activities would be temporary in nature and are not expected to cause or significantly contribute to a violation of any applicable ambient air quality standard.

Potential impacts on air quality associated with construction of the Project would be minimized by strict adherence to all applicable federal and state regulations. No operational impacts on air quality would be associated with the Project. We received a comment from the NYSDEC regarding operational and equipment changes that would be made at the Oakfield Compressor Station and how such changes would impact local air quality. Empire has proposed piping modifications and valve additions at the Oakfield Compressor Station. There would be no additional emissions sources or changes to existing emissions sources. Based on the analysis presented above, we believe that construction of the proposed facilities would have no adverse impacts on regional air quality.

6.2 Noise

Construction and operation of Project facilities may affect overall noise levels in the Project area. The ambient sound level of a location is defined by the total noise generated within the specific environment and is usually comprised of natural and artificial sounds. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of a day, a week, and throughout the year. This variation is caused in part by changing weather conditions, the effect of seasonal vegetative cover, and human activities.

Construction and operation of the Project would affect the local noise environment. Two measurements used by federal agencies to relate the time-varying quality of environmental noise to its known effects on people are the equivalent sound level (L_{eq}) and the day-night sound level (L_{dn}). The L_{eq} is an A-weighted sound level containing the same sound energy as instantaneous sound levels measured over a specific time period. Noise levels are perceived differently, depending on length of exposure and time of day. The L_{dn} takes into account the duration and time the noise is encountered. Late night through early morning (10:00 p.m. to 7:00 a.m.) noise exposures are penalized +10 decibels (dB) to account for people's greater sensitivity to sound during nighttime hours. An L_{dn} of 55 dB on the A-weighted scale (dBA) is equivalent to a continuous L_{eq} noise level of 48.6 dBA. A person's threshold for perception of a change in noise is considered to be 3 dB.

The EPA has indicated that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impact from construction and operation of the natural gas facilities.

Impacts are determined at receptors known as noise-sensitive areas (NSA). NSAs include residences, schools, and day-care facilities, hospitals, long-term care facilities, places of worship, libraries, parks, wilderness areas, and recreational areas valued specifically for their solitude and tranquility.

There are no applicable state noise regulations in New York or Pennsylvania for construction of the proposed natural gas facilities. At the local level, the Town of Victor restricts construction activities (except by special permission) to Monday through Friday from 7:00 a.m. to 7:00 p.m. and Saturdays from 7:00 a.m. to 6:00 p.m.

Nor are there any applicable state noise regulations for operation of the proposed facilities in Pennsylvania or New York. There are no local ordinances applicable to the TGP Interconnect Meter Station in the Town of Hopewell or Ontario County, New York. For the Producer Interconnect Meter Station, Tioga County indicates that there are no applicable county-enforced noise regulations. Tioga County attaches noise conditions to compressor stations, if necessary, during its review and approval of Land Development projects; however, because there are no proposed compression facilities, Tioga County indicated to Empire that the 55 dBA L_{dn} FERC criteria would sufficiently address its concerns regarding the Producer Interconnect Meter Station. Lawrence Township, in Tioga County, New York, requires that no measurable operational noises shall exceed 65 dBA at the property line.

Construction Impacts and Mitigation

Noise would be generated during the construction of the Project facilities. Mobile construction equipment would be operated on an as-needed basis during this period. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be temporary and local. The changing number and type of construction equipment present at these sites would result in varying levels of noise. The Project would utilize conventional construction techniques and equipment, including excavators, bulldozers, heavy trucks (e.g. water and dump trucks), and similar heavy construction equipment. Empire would minimize nighttime noise associated with construction by limiting most activities to daytime hours. However, Empire anticipates that the HDD activities on the Tioga Extension section would continue 7 days per week, 24 hours per day until the HDDs are completed (approximately 6-9 weeks). The HDD operations would take place in granular subsurface soils which have a tendency to ravel; therefore, a 24-hour HDD schedule may be required in order to minimize the effects of soil raveling.⁸ Empire stated that, should conditions allow, HDD operations may be reduced to daylight hours on a 10 to 12-hour-per-day, 6 day-per-week schedule.

Hoover and Keith, Inc. conducted an acoustical analysis for the proposed HDD operations at the Chemung River/I-80/Highway 352 crossing (see appendix F for site plan). The NSAs near the HDD entry and exit points were analyzed. The acoustical analysis was conducted to estimate the sound contribution of drilling activities at the nearest NSAs and to identify noise control measures needed to meet the FERC criteria. The results are presented in table 16.

Table 16: Estimated Noise Impacts for the Chemung River HDD Crossing							
No.	Entry or Exit Point	Distance & Direction of Nearest NSA	Calc'd Ambient Noise¹ (L_{dn}, dBA)	Calc'd Noise due to HDD² (L_{dn}, dBA)	Calc'd HDD Noise w/ Mitigation³ (L_{dn}, dBA)	HDD³ + Ambient (L_{dn}, dBA)	Increase Above Ambient (dB)³
1	Entry	350 feet SE	53.4	69.3	56.7	58.4 dBA	5.0 dB
	Exit	175 feet ESE	54.6	78.5	65.3	65.7 dBA	11.1 dB
¹ Ambient noise measurements include sounds from birds, highway traffic, and a distant aircraft. ² Estimated peak L _{dn} sound level for 24-hour HDD operations. ³ Estimated peak L _{dn} sound level for 24-hr with implementation of noise mitigation measures.							

The acoustical assessment indicates that the noise generated by HDD operations at the drill entry and exit sites could exceed the benchmark sound criteria of 55 dBA L_{dn} at the closest NSAs. Although temporary, this would be considered a negative affect.

Empire has developed a noise mitigation plan for the Chemung HDD entry and exit sites to further reduce the noise levels at the NSAs beyond the calculated levels in table 16. This plan includes:

⁸ Raveling occurs when chunks or flakes of soil drop out of the roof of a bored hole or tunnel during ground movement.

- meeting with the landowners at the nearby NSAs prior to commencement of HDD activities to explain the Project schedule and the proposed HDD operations and noise mitigation;
- requiring the HDD contractor to utilize equipment with proper mufflers and strategically locate the HDD auxiliary equipment (i.e., mud tanks, equipment trailers, etc.) to act as barriers for the adjacent NSAs, to the greatest extent possible; and
- installing a temporary barrier around the HDD entry and exit sites that meets the general barrier guidelines noted below.

The barrier would be constructed of at least ¾-inch plywood. If additional noise attenuation is required, the plywood would be lined on the HDD equipment side with 2 inches of medium-weight fiberglass board insulation such as Owens Corning 703 or Knauf Insulation Board, 3 pounds per cubic foot; the insulation can be covered with thin plastic sheeting for weather protection. There would be as few cracks and gaps in the barrier as possible. There would be negligible space between the bottom of the barrier and the ground. The barrier would break the line-of-sight between the drilling equipment and the closest NSAs. In locations where there is a long line of NSAs close to the drill site, it may be necessary to wrap the barrier around the edges of the drilling site.

Empire has stated that if the landowners are not satisfied with the noise control measures being incorporated and if the sound criterion of 55 dBA L_{dn} at the nearby NSAs is exceeded, it would offer the landowners temporary relocation compensation. Empire would coordinate with these landowners to develop alternate measures, if requested. To document the actual HDD noise levels at the NSAs, **we recommend that:**

Empire should monitor the noise levels attributable to the Project drilling activities at each NSA within 0.5 mile of the HDD entry and exit site and include these results in its biweekly status reports. Empire should make all reasonable efforts to restrict the noise attributable to the HDD operations to no more than an L_{dn} of 55 dBA at the nearest NSAs.

Operation Impacts and Mitigation

The proposed aboveground facilities would be constructed and operated in lightly populated, rural area with a few noise sources in the immediate vicinity. The NSAs are all residences. Construction would be temporary in nature and noise would return to ambient levels after construction is completed.

Noise would be generated during operation of the Producer and TGP Interconnect Meter Stations. Primary operational noise sources would be gas flow through the meter stations. Hoover and Keith, Inc. conducted a detailed noise assessment that included both a site ambient sound survey and an acoustical analysis (site plans for both meter stations are in appendix F) for the nearest NSAs within one mile of the stations. Dominant audible noise during the ambient survey included sounds from nearby light industrial equipment, birds and insects, and nearby traffic. The results of the sound surveys and acoustical assessments for the operation of the Producer and TGP Interconnect Meter Stations with are presented in table 17.

Table 17: Estimated Meter Station Noise

Project Noise Source	NSAs¹	Distance to Meter Station (feet)	Direction	Calc'd Ambient Noise (L_{dn}, dBA)	Est'd Meter Station Noise (L_{dn}, dBA)	Meter Station + Ambient (L_{dn}, dBA)	Potential Increase Above Ambient (dB)
Producer Inter-connect	House (NSA #1)	325	WSW	43.1	54.8	55.1	12.0
	House (NSA #2)	900	N	42.7	44.6	46.8	4.0
	House (NSA #3)	1,325	NE	47.8	40.3	48.5	0.7
TGP Inter-connect	House (NSA #1)	1,875	SW to NW	46.2	35.0	46.5	0.3
	House (NSA #2)	2,075	S to SE	47.7	33.7	47.9	0.2
	House (NSA #3)	1,350	ESE to ENE	57.5	38.9	57.5	0.1

¹ The NSAs were taken at representative locations. An NSA map for each meter station is located in appendix F.

Empire would implement noise mitigation measures recommended by Hoover and Keith, Inc. These measures include locating meter station piping below grade, to the extent possible, covering exterior portions of aboveground gas piping with permanent or removable acoustical insulation, if necessary, or installing aboveground piping inside a sound insulated building.

As indicated in table 17, the results of the noise survey indicate that the noise attributable to the meter stations, shown as the estimated meter station noise, would be less than an L_{dn} of 55 dBA at each NSA. A 3-dB increase in noise is perceived as barely noticeable, a 5-dB increase in noise is noticeable, and a 10-dB increase is perceived as a doubling of noise at the nearest NSA. The noise increase at NSAs near the TGP Interconnect Meter Station ranges from 0.1 dB to 0.3 dB, which would not be a noticeable change. The increase in noise due to the Producer Interconnect Meter Station would contribute to a doubling of the total noise at NSA 1; and, the noise attributable solely to the meter station could exceed our criterion. In order to ensure that the noise attributable to operation of the Producer Interconnect Meter Station would not exceed 55 dBA L_{dn}, **we recommend that:**

Empire should file a noise survey with the Secretary no later than 60 days after placing the Producer Interconnect Meter Station in service. If the noise attributable to the operation of the meter station exceeds an L_{dn} of 55 dBA at any nearby NSAs, Empire should install additional noise controls to meet that level within 1 year of the in-service date. Empire should confirm compliance with the L_{dn} of 55 dBA requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.

We received a comment letter from a landowner adjacent to the proposed TGP Interconnect Meter Station site. The landowner requested that Empire take necessary steps to reduce the noise impact on the area around the interconnect. If necessary, Empire would implement mitigation measures, as described above,

to reduce noise impacts. In addition, the landowner recommended a baseline noise study be conducted in order to quantify the noise impact of the meter station after it is placed in service. As stated above, Hoover and Keith, Inc. conducted a detailed noise assessment that included both a site ambient sound survey and an acoustical analysis of the meter station noise at the NSAs within one mile of the proposed meter station sites. We believe the landowner's residence is represented by NSA 3, which would experience an overall noise level of 57.5 dBA; however, this is equivalent to the existing ambient noise level and would not increase as a result of the operation activities at the TGP Interconnect Meter Station.

Based on the results of the acoustical analysis, Empire's proposed mitigation measures, our recommendations, and adherence to applicable federal and local regulations, we believe that construction and operation of the Project would have no significant impact on the noise environment in the Project area.

7.0 RELIABILITY AND SAFETY

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

Methane has an ignition temperature of 1,000 degrees Fahrenheit and is flammable at concentrations between 5 percent and 15 percent in air. Unconfined mixtures of methane in air are not explosive. However, a flammable concentration within an enclosed space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

Safety Standards

The USDOT is mandated to provide pipeline safety; its regulations are codified in Title 49 of the U.S. Code, Chapter 601. The Pipeline and Hazardous Materials Safety Administration's (PHMSA) Office of Pipeline Safety (OPS) administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards which set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. PHMSA ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the federal, state, and local level. Section 5(a) of the Natural Gas Pipeline Safety Act provides for a state agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the federal standards, while section 5(b) permits a state agency that does not qualify under section 5(a) to perform certain inspection and monitoring functions. A state may also act as USDOT's agent to inspect interstate facilities within its boundaries; however, the USDOT is responsible for enforcement actions. The majority of the states have either 5(a) certifications or 5(b) agreements, while nine states act as interstate agents.

The USDOT pipeline standards are published at 190-199 CFR 49. Part 192 specifically addresses natural gas pipeline safety issues. Under a *Memorandum of Understanding on Natural Gas Transportation Facilities* (Memorandum) dated January 15, 1993 between the USDOT and the FERC, the USDOT has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations require that an applicant certify that it will design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. Alternatively, the applicant must certify that it has been granted a waiver of the requirements of the safety standards by the USDOT in accordance with section 3(e) of the Natural Gas Pipeline Safety Act. The FERC accepts this certification and does not impose additional safety standards other than the USDOT standards. If the Commission becomes aware of an existing or potential safety problem, there is a provision in the Memorandum to promptly alert USDOT. The Memorandum also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to pipeline under the Commission's jurisdiction. The FERC also participates as a member of the USDOT's Technical Pipeline Safety Standards Committee, which determines if proposed safety regulations are reasonable, feasible, and practicable.

The pipeline and aboveground facilities associated with the Tioga County Extension Project must be designed, constructed, op, and maintained in accordance with the USDOT Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. Part 192 specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion.

Part 192 also defines area classifications, based on population density in the vicinity of the pipeline and specifies more rigorous safety requirements for populated areas. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline. The four area classifications are defined as follows:

- Class 1 - location with 10 or fewer buildings intended for human occupancy;
- Class 2 - location with more than 10 but less than 46 buildings intended for human occupancy;
- Class 3 - location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building or a small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12-month period; and
- Class 4 - location where buildings with four or more stories aboveground are prevalent.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. Pipe wall thickness and pipeline design pressures, hydrostatic test pressures, MAOP, inspection and testing of welds, and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas. The class locations for the Project are shown in table 18.

Table 18: Class Locations of Project Elements		
Location	MP	Class Location by Code
Tioga County Extension Section, Tioga County, Pennsylvania	0.00 – 0.15	Class 1
Tioga County Extension Section, Steuben County, New York	0.15 – 8.75	Class 1
	8.75 – 14.90	Class 2
Lift and Lay Section, Ontario County, New York	0.00 – 1.15	Class 3
	1.15 – 1.36	Class 2
TGP Interconnect Meter Station, Ontario County, New York	-	Class 1
Oakfield Compressor Station, Genesee County, New York	-	Class 1

If a subsequent increase in population density adjacent to the pipeline right-of-way indicates a change in class location for the pipelines, Empire would reduce the MAOP, replace the segment with pipe of sufficient grade and wall thickness, or seek a special permit from USDOT (if required to comply with the USDOT regulations for the new class location).

In 2002, Congress passed an act to strengthen the Nation's pipeline safety laws. The Pipeline Safety Improvement Act of 2002 was signed into law in December 2002. It required that by no later than December 2004, gas transmission operators develop and follow a written integrity management program that contained all the elements described in section 192.911 and address the risks on each covered transmission pipeline segment. Specifically, the law established an integrity management program which applies to all high consequence areas (HCA). The USDOT defines HCAs as they relate to the different class zones, potential impact circles, or areas containing an identified site as defined in section 192.903 of the USDOT regulations.

OPS published a series of rules from August 6, 2002 to May 26, 2004, that defines HCAs where a gas pipeline accident could do considerable harm to people and their property and requires an integrity management program to minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate for OPS to prescribe standards that establish criteria for identifying each gas pipeline facility in a high-density population area.

The HCAs may be defined in one of two ways. In the first method an HCA includes:

- current Class 3 and 4 locations;
- any area in Class 1 or 2 where the potential impact radius⁹ is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle;¹⁰ or
- any area in Class 1 or 2 where the potential impact circle includes an identified site.¹¹

⁹ The potential impact radius is calculated as the product of 0.69 and the square root of the MAOP of the pipeline in pounds per square inch gauge, multiplied by the pipeline diameter in inches.

¹⁰ The potential impact circle is a circle of radius equal to the potential impact radius.

In the second method, an HCA includes any area within a potential impact circle which contains:

- 20 or more buildings intended for human occupancy, or
- an identified site.

Once a pipeline operator has determined the HCAs on its pipeline, it must apply the elements of its integrity management program to those segments of the pipeline within HCAs. The USDOT regulations specify the requirements for the integrity management plan at Section 192.911. The HCAs have been determined based on the relationship of the pipeline centerline to other nearby structures and identified sites. Class 2 and 3 locations, as defined in table 18, are considered HCAs for the Project. The pipeline integrity management rule for HCAs requires inspection of the entire pipeline in HCAs every 7 years.

Part 192 prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities. Under Section 192.615, each pipeline operator must also establish an emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency. Key elements of the plan include procedures for:

- receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters;
- establishing and maintaining communications with local fire, police, and public officials and coordinating emergency response;
- emergency shutdown of the system and safe restoration of service;
- making personnel, equipment, tools, and materials available at the scene of an emergency; and
- protecting people first and then property, and making them safe from actual or potential hazards.

Part 192 requires that each operator must establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency and to coordinate mutual assistance. The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials. Empire would provide the appropriate training to local emergency service personnel before the pipeline is placed in service. No additional specialized local fire protection equipment would be required to handle pipeline emergencies.

Pipeline Accident Data

Since February 9, 1970, 49 CFR 191 has required all operators of transmission and gathering systems to notify the USDOT of specific types of incidents that occurred during the operation of the natural gas transmission and gathering systems nationwide. The USDOT changed reporting requirements after June 1984 to reduce the amount of data collected. However, because the 14.5-year period from 1970 through

11 An identified site is an outside area or open structure that is occupied by 20 or more persons on at least 50 days in any 12-month period; a building that is occupied by 20 or more persons on at least 5 days a week for any 10 weeks in any 12-month period; or a facility that is occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate.

June 1984 provides a larger universe of data and more basic report information than subsequent years, it has been subject to detailed analysis, as discussed below (Jones, 1986).

From February 1970 through June 1984, the dominant incident cause was outside forces, constituting 53.8 percent of all service incidents. Outside forces incidents result from the encroachment of mechanical equipment such as bulldozers, and backhoes; earth movements due to soil settlement, washouts or geologic hazards; weather effects such as winds, storms and thermal strains; and willful damage. An analysis of the outside forces incidents shows that human error in equipment usage was responsible for approximately 75 percent of outside forces incidents. Since April 1982, operators have been required to participate in "One Call" public utility programs in populated areas to minimize unauthorized excavation activities in the vicinity of pipelines. The "One Call" program is a service used by public utilities and some private sector companies (e.g., oil pipelines and cable television) to provide pre-construction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts. The 1986-through-2007 data show that the portion of incidents caused by outside forces has decreased to 36.0 percent.

The frequency of service incidents is strongly dependent on pipeline age. While pipelines installed since 1950 exhibit a fairly constant level of service incident frequency, pipelines installed before that time have a significantly higher rate, partially due to corrosion. Older pipelines have a higher frequency of corrosion incidents, since corrosion is a time-dependent process. Further, new pipe generally uses more advanced coatings and cathodic protection to reduce corrosion potential. The use of both an external protective coating and a cathodic protection system, required on all pipelines installed after July 1971, significantly reduces the rate of failure compared to unprotected or partially protected pipe. Older pipelines also have a higher frequency of outside forces incidents partly because their location may be less well known and less well marked than newer lines. In addition, the older pipelines contain a disproportionate number of smaller diameter pipelines, which are more easily crushed or broken by mechanical equipment or earth movements.

The available data shows that natural gas pipeline facilities continue to be a safe, reliable means of energy transportation. Based on approximately 320,000 miles in service, the rate of public fatalities for the nationwide mix of transmission and gathering lines in service is 0.01 per year per 1,000 miles of pipeline. Using this rate, the Project might result in a public fatality every 3,906-plus years. This would represent a slight increase in risk to the nearby public. The USDOT Minimum Federal Safety Standards define the parameters which an applicant must abide by in order to operate its pipeline system safely. We believe that safe operation of the Tioga County Extension Project would be accomplished by Empire's compliance with the USDOT standards.

C. CUMULATIVE IMPACTS

Cumulative impacts may result when the environmental effects associated with the proposed action are added to impacts associated with projects in the past, present, or reasonably foreseeable future that occur in the same general area or region. Although the effects of one project may be minor, the additive impacts of multiple projects could be significant. We consider the cumulative impacts of those activities that occur in the same vicinity and time frame as the proposed Project.

County and local planning agencies in the affected areas were contacted to identify major developments within 0.5 mile of the proposed Tioga County Extension Section, Lift and Lay Section, and TGP Interconnect Meter Station. “Major developments” are defined as commercial/industrial projects, subdivisions, utility installation, and infrastructure projects. Ongoing or proposed projects within 0.5 mile of the Tioga County Extension Project area include two natural gas pipeline projects, Marcellus Shale development and production well projects, and one residential subdivision.

The two natural gas pipeline projects would be constructed by Talisman USA (formerly Fortuna Energy, Inc.) and East Resources Inc. to connect their Marcellus Shale gas well facilities to the proposed Project. Both Talisman USA and East Resources Inc. have existing and proposed Marcellus Shale gas well facilities south of the proposed Project in Tioga County, Pennsylvania. These facilities include new gathering pipelines along new and existing rights-of-way. Both companies plan to transport shale gas through the Tioga County Extension Section from interconnections at MP 0.0.

Additionally, there are multiple locations where Marcellus Shale natural gas development and production activities are presently underway in Tioga, Potter, Bradford, and Lycoming Counties, Pennsylvania. Impacts of these activities include well pad development, well drilling (including hydraulic fracturing of the shale to stimulate gas release), improvement of existing dirt and paved roads, and construction of new gathering systems and associated rights-of-way. While the Marcellus Shale is undergoing development in Ohio, West Virginia, and Pennsylvania, New York has effectively prohibited the use of hydraulic fracturing until it completes a Supplemental Generic Environmental Impact Statement to assess issues unique to development of the Marcellus and other low permeability reservoirs. Although there could potentially be impacts on waterbodies, wetlands, land use, air quality, noise, and socioeconomics from development of the Marcellus Shale, we feel that the proposed Project would not result in, or significantly add to, cumulative impacts associated with Marcellus Shale development for the following reasons:

- the Project is located almost entirely in New York (distant from shale development in Pennsylvania);
- the minor scope of the potential impacts associated with the Project (as documented in this EA); and
- the nature and uncertainty of timing and location of Marcellus Shale development.

We considered the potential cumulative impacts of the Project with respect to Susquehanna River Basin water withdrawals resulting from oil and gas development in the Marcellus Shale region. The ongoing withdrawal of surface waters in the region to stimulate horizontal or vertical natural gas wells by hydraulic fracturing and other associated activities (e.g., dust control, hydrostatic testing) involves project review and permitting by one or more regulatory agencies overseeing consumptive use of water, including surface water withdrawal, groundwater withdrawal, and wastewater treatment procedures. Empire has identified water withdrawal requirements associated with the Project, including hydrostatic testing, HDD installation, and other construction activities. Empire would comply with stipulations that are mandated by the SRBC, PADEP, and the NYSDEC through the application review process. Empire anticipates obtaining hydrostatic test water from a local hydrant and from an existing quarry pond. The regulatory process would ensure that concurrent projects involving water withdrawals do not result in

significant impacts. Therefore, no cumulative impacts are anticipated for the hydrostatic testing, HDD installation, and other construction activities planned for the Project.

Ongoing subdivision development is occurring adjacent to the Lift and Lay Section. Because the proposed pipeline construction activities would be confined to Empire's existing right-of-way, it is unlikely that the Project would significantly add to the impacts associated with the subdivision development or create new adverse impacts to the Project area.

There are no known residential subdivisions within 0.5 mile of the Tioga County Extension Section or the TGP Interconnect Meter Station that are either planned or under construction.

Due to the implementation of specialized construction techniques and mitigation measures designed to minimize environmental impacts for the Project, only a small cumulative effect is anticipated when the impacts of the Project would be added to the identified ongoing or proposed projects in the immediate area.

We believe that the Marcellus Shale facilities, subdivision development, and the proposed Project would have a minor cumulative effect on resources in the Project area.

D. ALTERNATIVES

We evaluated alternatives to the Project to determine whether they would be reasonable and environmentally preferable to the proposed action. These alternatives included the no action or postponed action alternative, system alternatives, aboveground facility site alternatives, and pipeline route alternatives. Our analysis of alternatives was based on information provided by Empire, aerial photographs, USGS topographic maps, and input from the public and agencies.

The following evaluation criteria were used to determine whether alternatives would be environmentally preferable: ability to meet the proposed Project's objectives, technical feasibility, and significant environmental advantage over the proposed Project.

1.0 NO-ACTION OR POSTPONED ACTION ALTERNATIVE

Under the no-action or postponed action alternative, Empire would not construct the Project and all impacts directly associated with project construction and operation would be avoided or delayed. However, under the no-action or postponed action alternative, the benefits of the Project would not be realized. These benefits include economical access for new sources of natural gas supply for high-growth Northeast markets and enhanced supply diversity, security, and reliability.

If the Project is not built, the needs of Empire's customers may be met by other gas pipeline facilities, the construction and operation of which would likely have similar if not greater environmental impacts than the proposed Project. Considering the minor scope of potential impacts associated with the Project, we believe that the no-action or postponed action alternatives are not reasonable alternatives.

2.0 SYSTEM ALTERNATIVES

System alternatives are alternatives to the proposed action that would make use of other existing, modified, or proposed pipeline systems to meet the Project's stated objective. System alternatives involve the transportation of the equivalent amount of incremental natural gas by an existing (unmodified) pipeline system, an expansion of an existing pipeline system, or by an entirely new pipeline system. A system alternative would make it unnecessary to construct all or part of the proposed Project, although some modifications or additions to another existing pipeline or another entirely new system could be required to allow for the transportation of the additional natural gas.

There are no existing systems located geographically in northern Tioga County, Pennsylvania or southern Steuben County, New York capable of receiving these quantities of gas and transporting them economically to the interstate pipeline grid serving the growing markets of the US North East.

No system alternatives were identified during scoping and we have not identified any system alternatives capable of providing the proposed transportation services. Therefore, system alternatives will not be addressed further.

3.0 ABOVEGROUND FACILITY SITE ALTERNATIVES

Aboveground facilities proposed for the Project include the Producer Interconnect Meter Station, one MLV assembly, the TGP Interconnect Meter Station, mainline drip, and modifications at the existing Victor and New Victor Pressure Control Stations and the Oakfield Compressor Station.

The Tioga County Extension Section has "fixed" beginning and ending points with little flexibility. The general location of the southern terminus is determined by the location of the Producer Interconnect Meter Station south of State Line Road in Jackson Township, Tioga County, Pennsylvania, for which a land option agreement has been secured. A land option agreement has also been secured for the proposed MLV site. The northern terminus ties-in directly adjacent to Empire's existing Corning M&R Station. A land option agreement has also been secured for the TGP Interconnect Meter Station site.

We did not identify any alternative sites for the Producer Interconnect Meter Station, MLV, mainline drip, or the Victor, New Victor, and Oakfield Station modifications. No public comment identified an alternative site for these facilities and our review revealed no significant environmental impacts with the proposed site. Therefore, alternative sites for these facilities will not be addressed further.

3.1 Tennessee Gas Pipeline Company Interconnect Meter Station

Empire considered alternative locations for the TGP Interconnect Meter Station along a several-mile section west of New York State Route 21 in the Town of Hopewell, New York, where Empire parallels the TGP pipeline. Although it would be feasible for Empire to interconnect with TGP at any point along the co-location, TGP states that the proposed site (which is the easternmost co-location point) is preferred because it optimizes pipeline system hydraulics. The proposed TGP Interconnect Meter Station site was determined in coordination with the landowner, and a land option agreement has been secured. The proposed site does not require any tree clearing and is located approximately 1,500 feet from the nearest roadway and approximately 2,000 feet from the nearest residence, thus minimizing visual impacts. In

addition, electric service is readily available near the site. No wetlands would be impacted by the proposed TGP Interconnect Meter Station.

The proposed meter station site is acceptable to the landowner and would result in no significant environmental impacts. Therefore, we did not evaluate additional alternative sites.

4.0 PIPELINE ROUTE ALTERNATIVES

4.1 Tioga County Extension Section

The Tioga County Extension Section extends between fixed points on both its south and north ends, i.e., the producer interconnects on the south, and the tie-in to the existing Empire Connector Pipeline on the north. The northern end of the proposed route would be co-located with an existing TEPPCO right-of-way for about 4.9 miles (MP 14.6 - 9.7), but no feasible co-location opportunities were identified on the southern end. However, the abundance of agricultural and open areas minimized impacts on forested areas.

Empire evaluated several alternative pipeline routes while developing its proposed route. These alternatives are described in its application and can be viewed on the Commission's eLibrary under Docket No. CP10-493-000. No comments were received during scoping which requested that we consider alternatives to the proposed Tioga County Extension Section route and our review of the proposed route found no significant environmental impacts that would drive our evaluation of additional route alternatives.

4.2 Lift and Lay Section

Empire's analysis of the flow requirements for the Project indicated that the existing MAOP in the 1.36-mile-long Lift and Lay Section (1,000 pounds per square inch gauge [psig]) would be inadequate to perform the proposed service (1,290 psig minimum); therefore, a pipeline upgrade is warranted. The replacement of the existing pipeline would be mostly limited to the existing right-of-way, thereby minimizing impacts on the environment.

E. STAFF CONCLUSIONS AND RECOMMENDATIONS

We conclude that approval of this proposal would not constitute a major federal action significantly affecting the quality of the human environment. This finding is based on the analysis in this EA, Empire's application and supplemental filings, implementation of Empire's proposed mitigation, and our additional measures listed below. We recommend that the Commission Order contain a finding of no significant impact and include the mitigation measures listed below as conditions to any Certificate the Commission may issue.

1. Empire shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. Empire must:
 - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of OEP before using that modification.
2. The Director of OEP has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the project. This authority shall allow:
 - a. the modification of conditions of the Order; and
 - b. the design and implementation of any additional measures deemed necessary (including stop-work authority) to assure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from project construction and operation.
3. **Prior to any construction**, Empire shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.
4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, Empire shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Empire's exercise of eminent domain authority granted under NGA section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Empire's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas pipeline to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. Empire shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area.**

This requirement does not apply to extra workspace allowed by Empire's *Upland Erosion Control, Revegetation, and Maintenance Plan* and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
 - b. implementation of endangered, threatened, or special concern species mitigation measures;
 - c. recommendations by state regulatory authorities; and
 - d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.
6. **Within 60 days of the acceptance of the Certificate and before construction begins**, Empire shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. Empire must file revisions to the plan as schedules change. The plan shall identify:
- a. how Empire will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
 - b. how Empire will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
 - c. the number of EIs assigned, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
 - d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
 - e. the location and dates of the environmental compliance training and instructions Empire will give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change);
 - f. the company personnel (if known) and specific portion of Empire's organization having responsibility for compliance;
 - g. the procedures (including use of contract penalties) Empire will follow if noncompliance occurs; and
 - h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:

- (1) the completion of all required surveys and reports;
 - (2) the environmental compliance training of onsite personnel;
 - (3) the start of construction; and
 - (4) the start and completion of restoration.
7. Beginning with the filing of its Implementation Plan, Empire shall file updated status reports with the Secretary on a biweekly basis until all construction and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
 - a. an update on Empire's efforts to obtain the necessary federal authorizations;
 - b. the construction status of the project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;
 - c. a listing of all problems encountered and each instance of noncompliance observed by the EIs during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
 - d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;
 - e. the effectiveness of all corrective actions implemented;
 - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
 - g. copies of any correspondence received by Empire from other federal, state, or local permitting agencies concerning instances of noncompliance, and Empire's response.
8. **Prior to receiving written authorization from the Director of OEP to commence construction of project facilities in each state**, Empire shall file with the Secretary documentation that it has received all authorizations required under federal law (or evidence of waiver thereof) in each respective state.
9. Empire must receive written authorization from the Director of OEP **before placing the project into service**. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the project are proceeding satisfactorily.
10. **Within 30 days of placing the authorized facilities in service**, Empire shall file an affirmative statement with the Secretary, certified by a senior company official:
 - a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
 - b. identifying which of the Certificate conditions Empire has complied with or will comply with. This statement shall also identify any areas affected by the project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
11. Empire **shall not begin construction** of facilities and/or use of staging, storage, or temporary work areas and new or to-be-improved access roads **until**:
 - a. Empire files with the Secretary:
 - (1) remaining cultural resources survey report(s);

- (2) site evaluation report(s) and avoidance/treatment plan(s), as required;
 - (3) comments on the cultural resources reports and plans from the Pennsylvania and New York SHPOs and any interested Indian tribes;
- b. the ACHP is afforded an opportunity to comment if historic properties would be adversely affected; and
- c. the FERC staff reviews and the Director of OEP approves the cultural resources reports and plans, and notifies Empire in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.

All materials filed with the Commission containing **location, character, and ownership** information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: **“CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE.”**

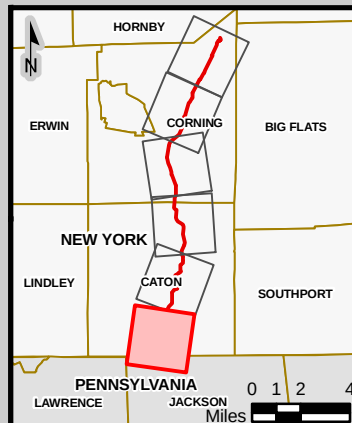
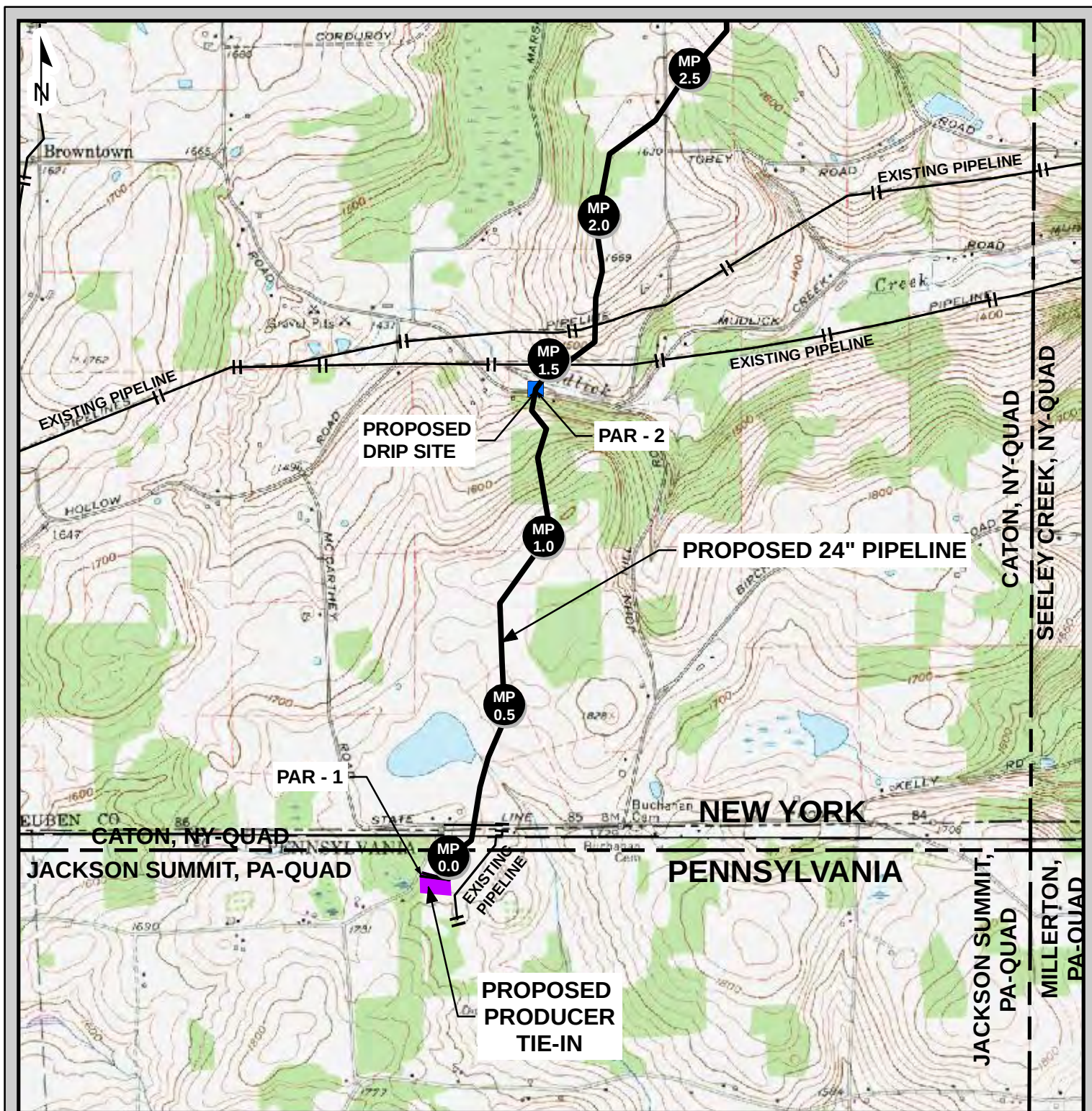
- 12. Empire shall monitor the noise levels attributable to the Project drilling activities at each NSA within 0.5 mile of the HDD entry and exit site and include these results in its biweekly status reports. Empire shall make all reasonable efforts to restrict the noise attributable to the HDD operations to no more than an L_{dn} of 55 dBA at the nearest NSAs.
- 13. Empire shall file a noise survey with the Secretary **no later than 60 days** after placing the Producer Interconnect Meter Station in service. If the noise attributable to the operation of the meter station exceeds an L_{dn} of 55 dBA at any nearby NSAs, Empire shall install additional noise controls to meet that level **within 1 year** of the in-service date. Empire shall confirm compliance with the L_{dn} of 55 dBA requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

F. REFERENCES

- Empire. 2010. Application to Construct and Operate the Tioga County Extension project. Sent to FERC August 2010.
- Jones, D.J., G.S. Kramer, D.N. Gideon, and R.J. Eiber, 1986. "An Analysis of Reportable Incidents for Natural Gas Transportation and Gathering Lines 1970 Through June 1984." NG-18 Report No. 158, Pipeline Research Committee of the American Gas Association.
- New York Department of Environmental Conservation (NYSDEC). 2010. Letter from the NYSDEC to the FERC dated May 7, 2010.
- U.S. Fish and Wildlife Service. 2010a. Telephone communication on June 8, 2010 between Jeff Gosse (FWS, Region 8) and Jeff Smith (Empire environmental consultant).
- U.S. Fish and Wildlife Service. 2010b. Telephone communication on June 7, 2010 between Eliza Savage (FWS, Region 5) and Jeff Smith (Empire environmental consultant).

Appendix A

USGS Topographic Quadrangle Project Location Maps



TIOGA EXTENSION - USGS QUAD MAPS



FISHER ASSOCIATES
325 Delaware Ave, Suite 200
Buffalo, NY 14202
716-858-1234



Empire Pipeline
A National Fuel Gas Company



Hatch Mott MacDonald

FIGURE 1 OF 6

Project: 092023-226

Revision Date: August 24, 2010

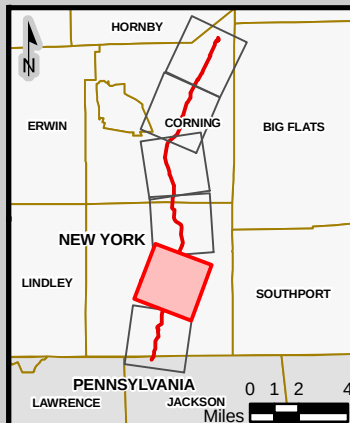
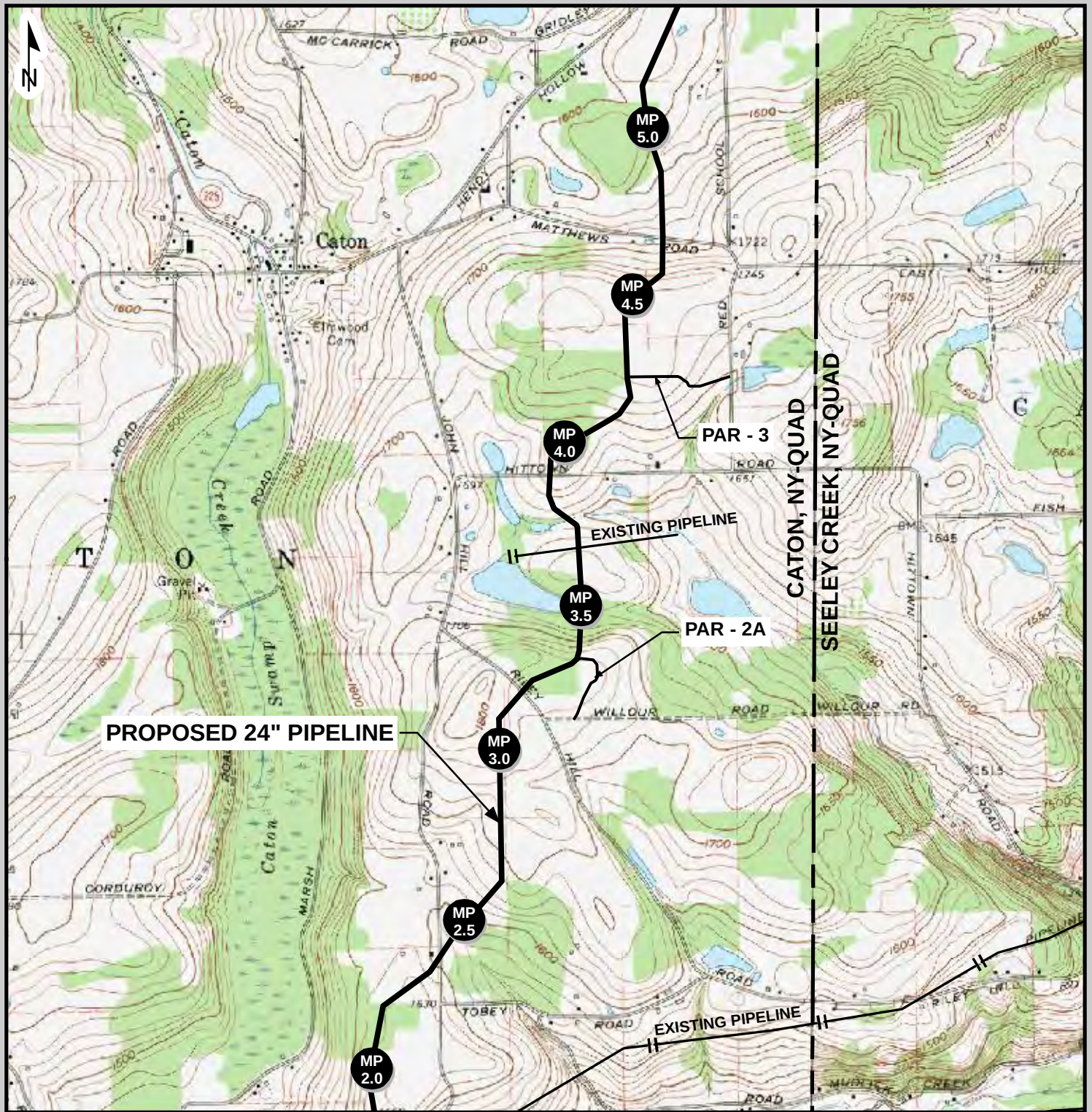
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QA/QC: Steve Boddecker, Kevin Jenkins

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TIOGA EXTENSION - USGS QUAD MAPS



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FIGURE 2 OF 6

Project: 092023-226

Revision Date: August 24, 2010

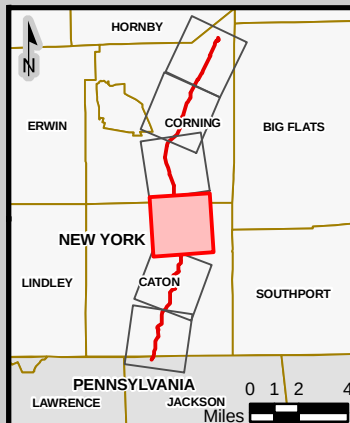
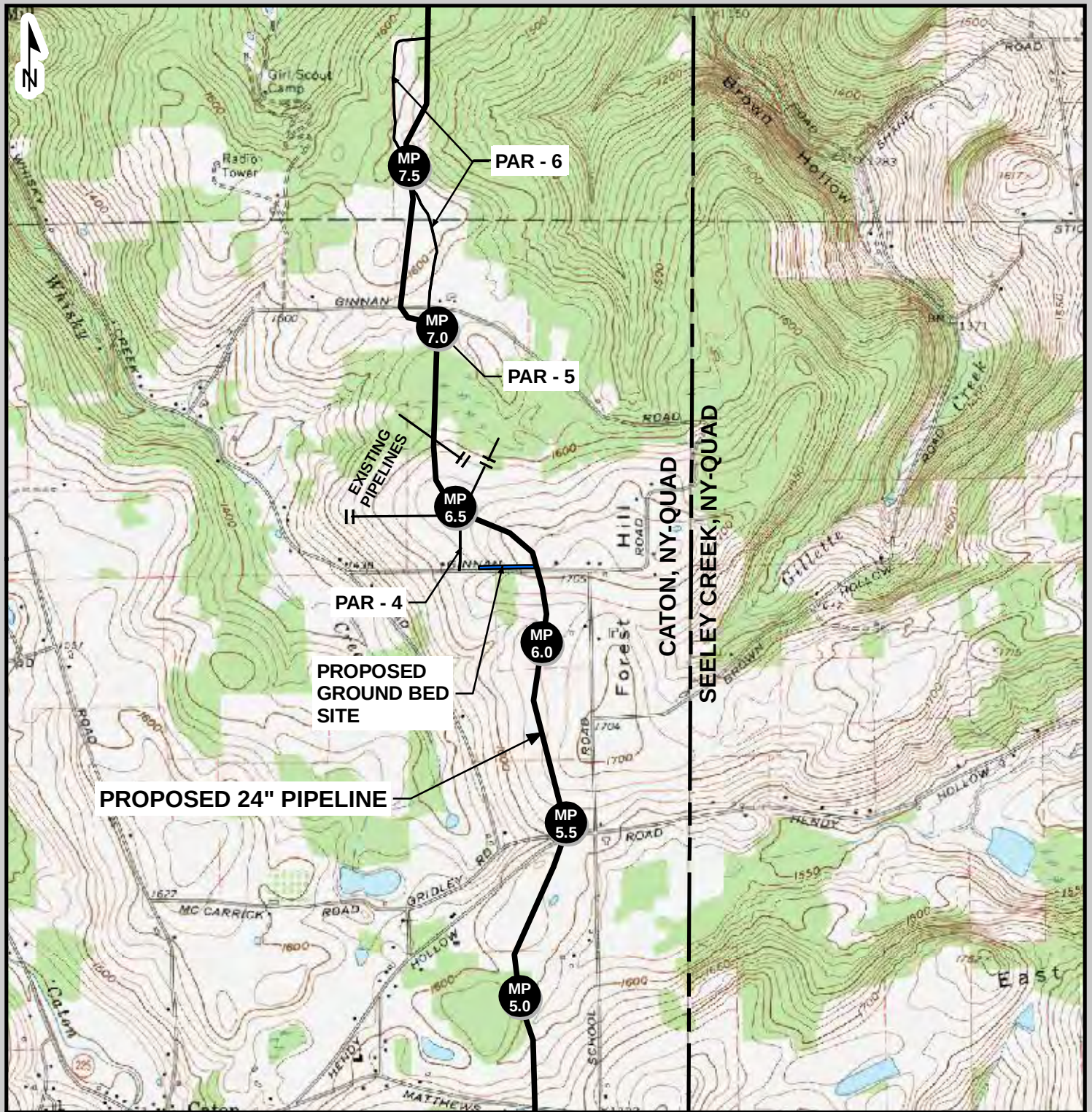
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QA/QC: Steve Boddecker, Kevin Jenkins

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TIOGA EXTENSION - USGS QUAD MAPS



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FIGURE 3 OF 6

Project: 092023-226

Revision Date: August 24, 2010

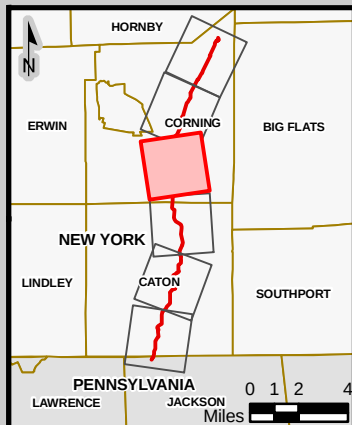
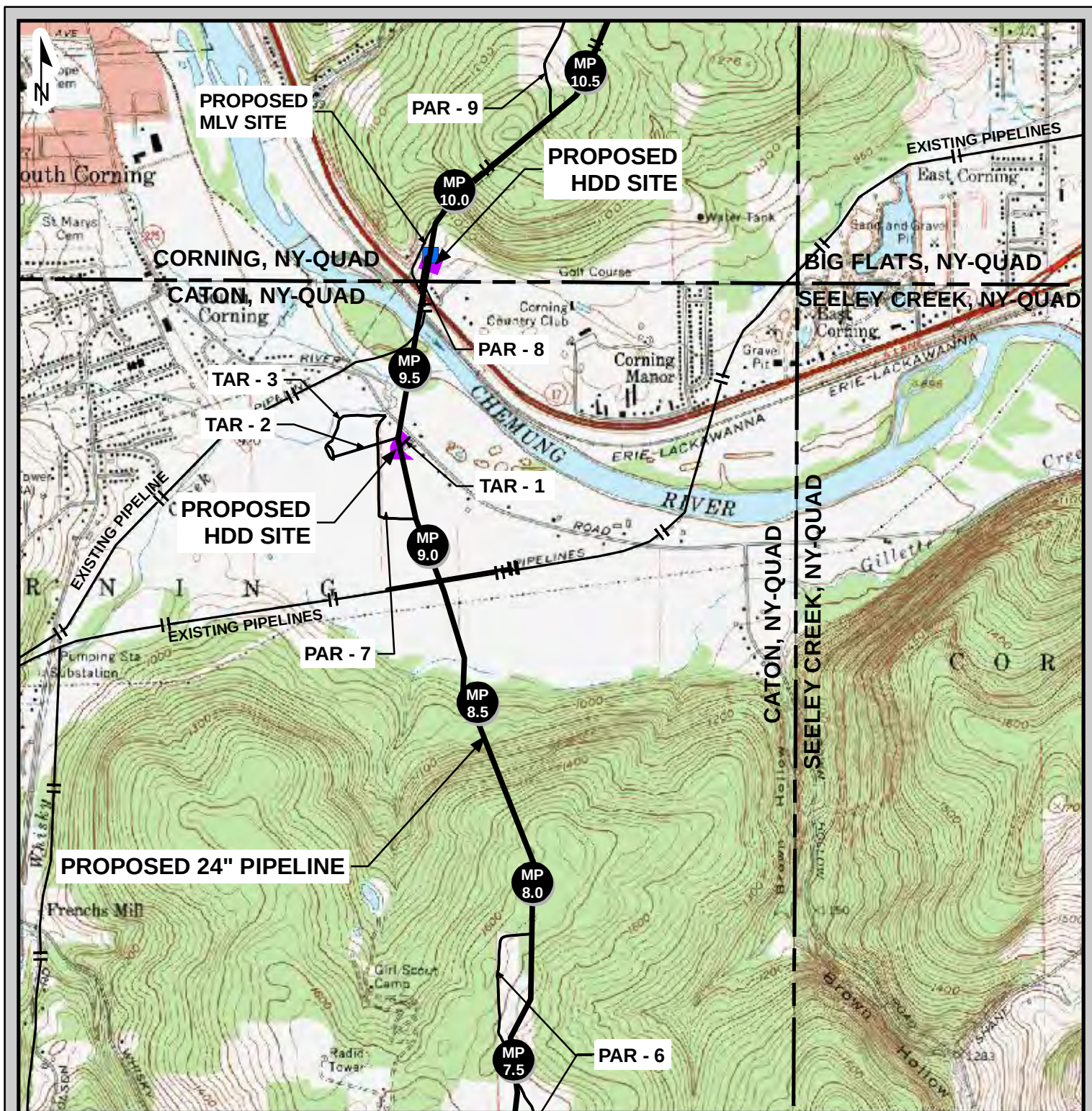
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QA/QC: Steve Boddecker, Kevin Jenkins

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TIOGA EXTENSION - USGS QUAD MAPS



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FIGURE 4 OF 6

Project: 092023-226

Revision Date: August 24, 2010

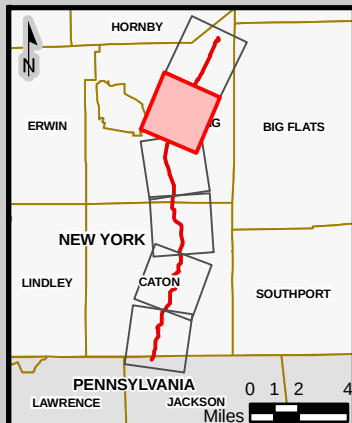
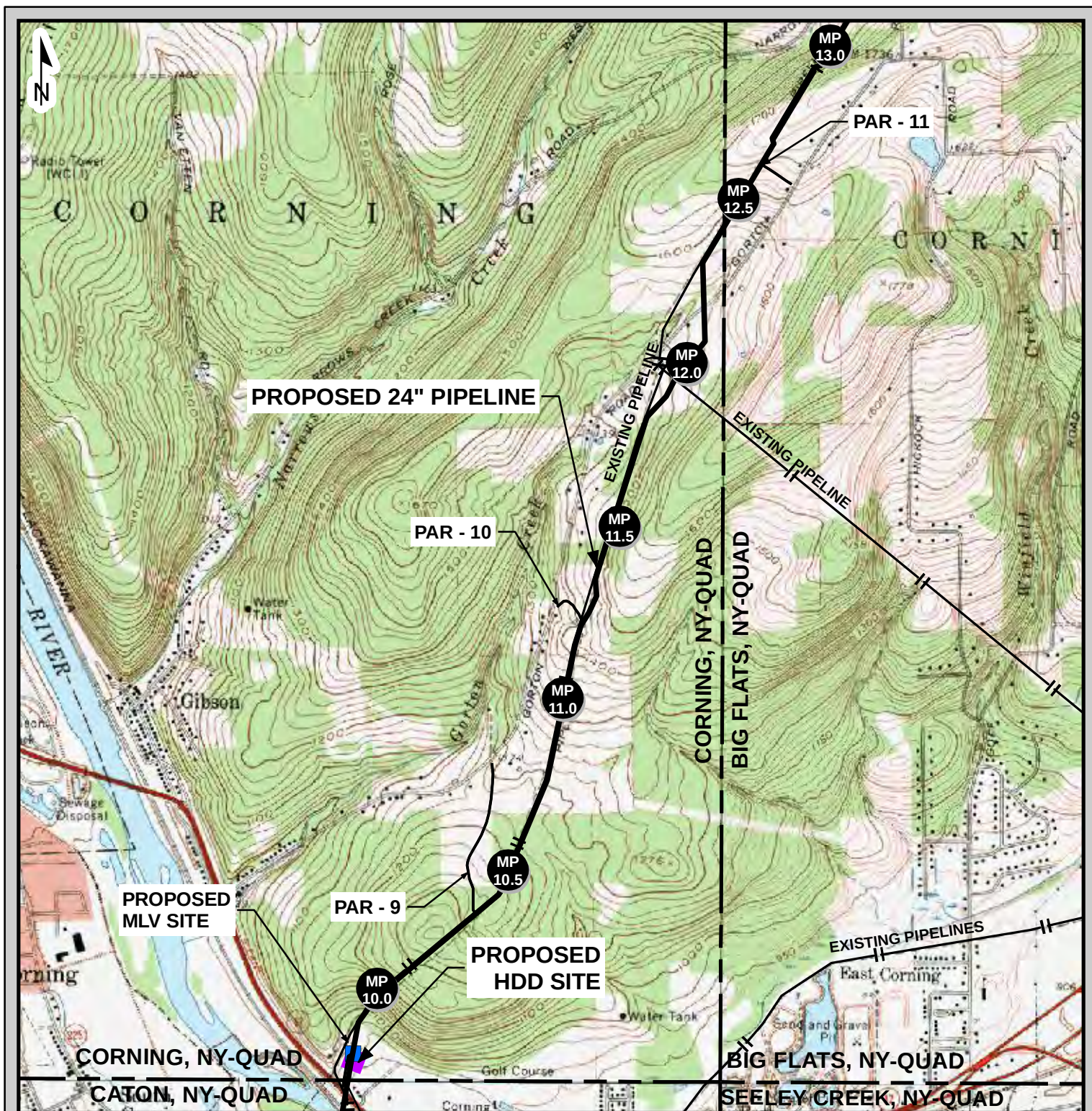
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Author: Maggie Norman

QA/QC: Steve Boddecker, Kevin Jenkins

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TIOGA EXTENSION - USGS QUAD MAPS



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FIGURE 5 OF 6

Project: 092023-226

Revision Date: August 24, 2010

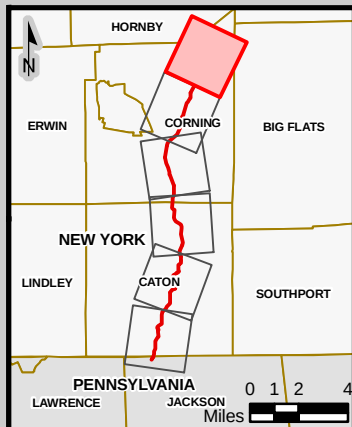
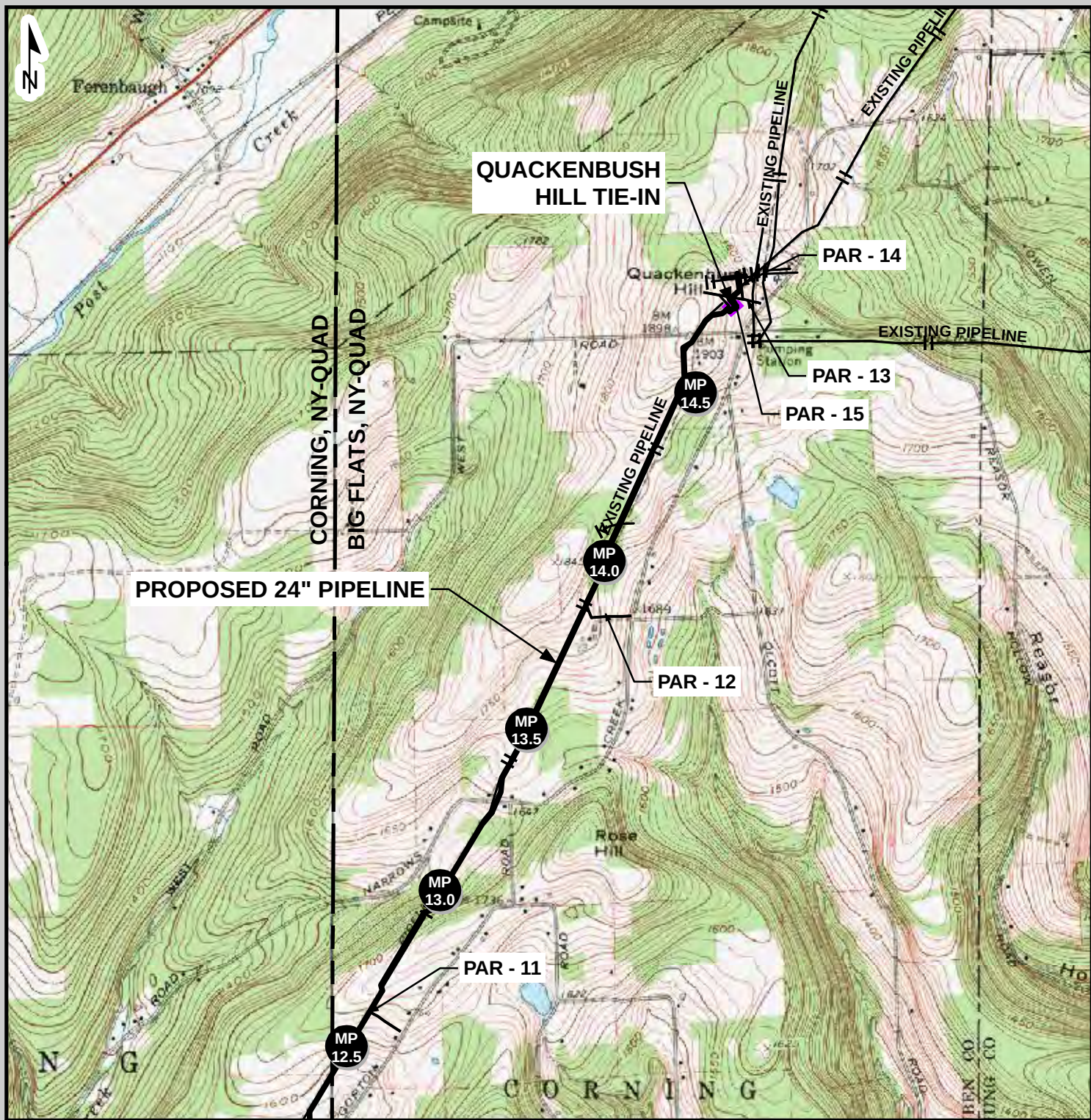
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QA/QC: Steve Boddecker, Kevin Jenkins

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TIOGA EXTENSION - USGS QUAD MAPS



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FIGURE 6 OF 6

Project: 092023-226

Revision Date: August 24, 2010

Revision Time: 10:13:34 AM

Author: Maggie Norman

QA/QC: Steve Boddecker, Kevin Jenkins

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TIOGA EXTENSION LIFT AND LAY - USGS QUAD MAPS FAIRPORT, NY-QUAD



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Project: 092023-226

Revision Date: July 6, 2010

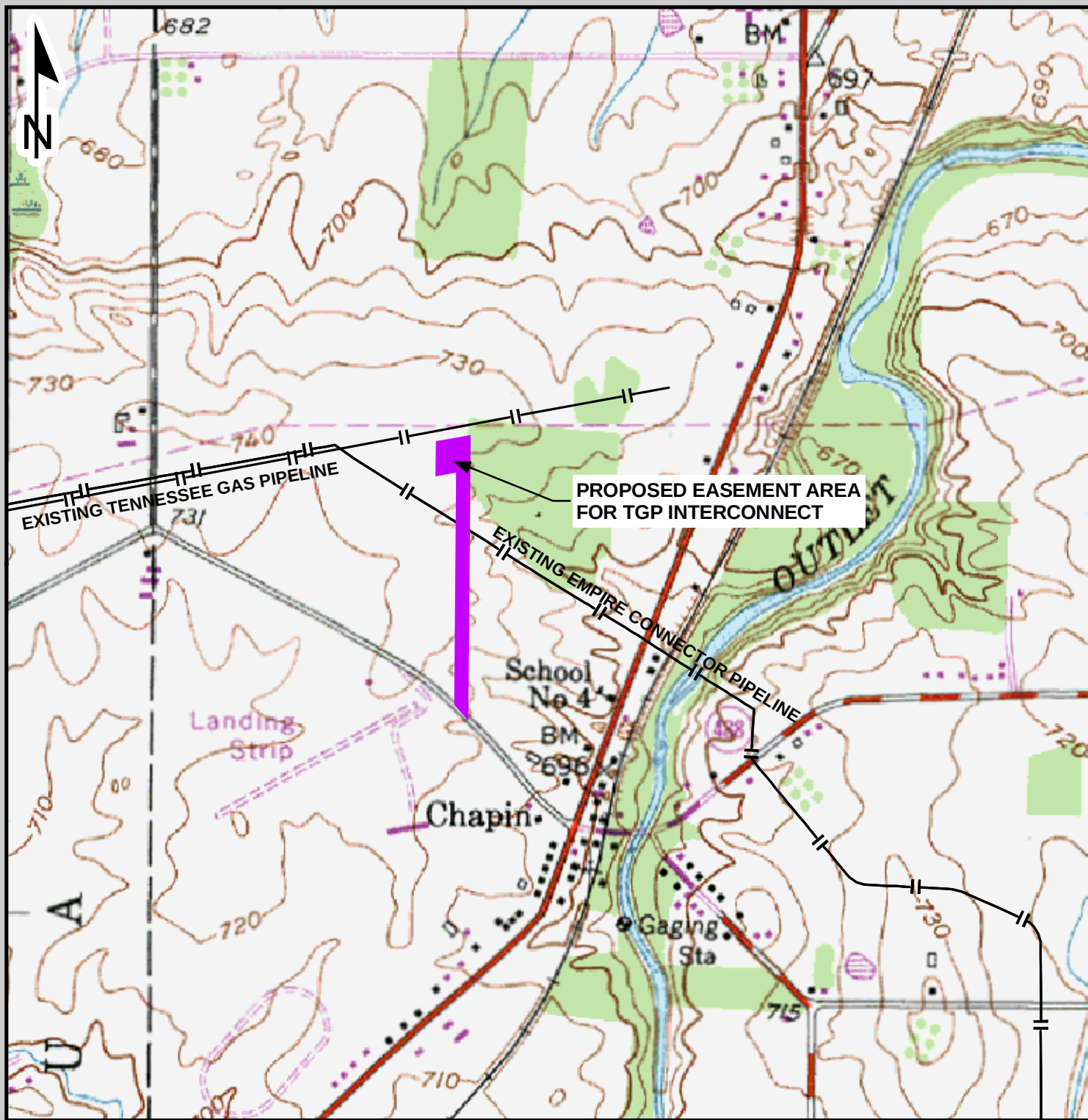
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TIOGA EXTENSION TGP INTERCONNECT - USGS QUAD MAPS CLIFTON SPRINGS, NY-QUAD



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Project: 092023-226

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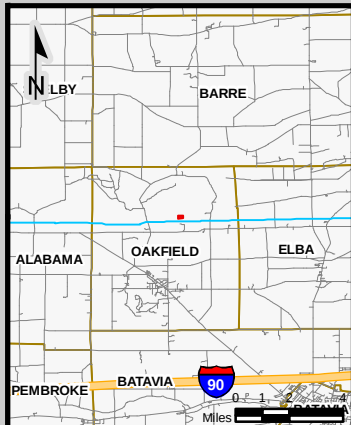
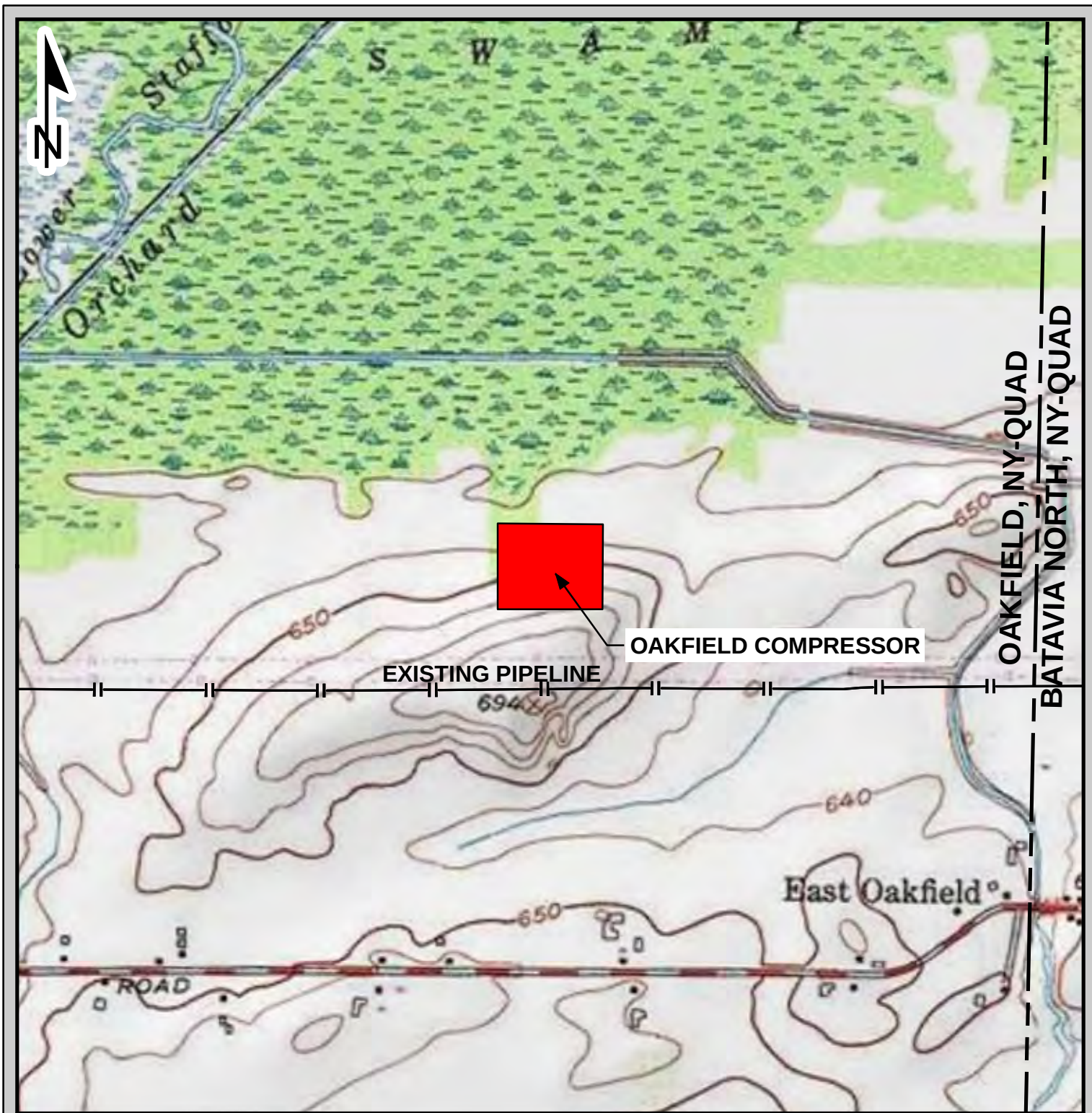
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QAQC: Steve Boddecker, Kevin Jenkins

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**TIOGA EXTENSION
OAKFIELD COMPRESSOR STATION - USGS QUAD MAPS
OAKFIELD, NY-QUAD AND BATAVIA NORTH, NY-QUAD**



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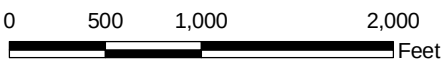
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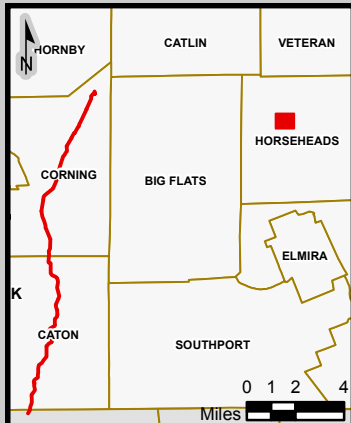
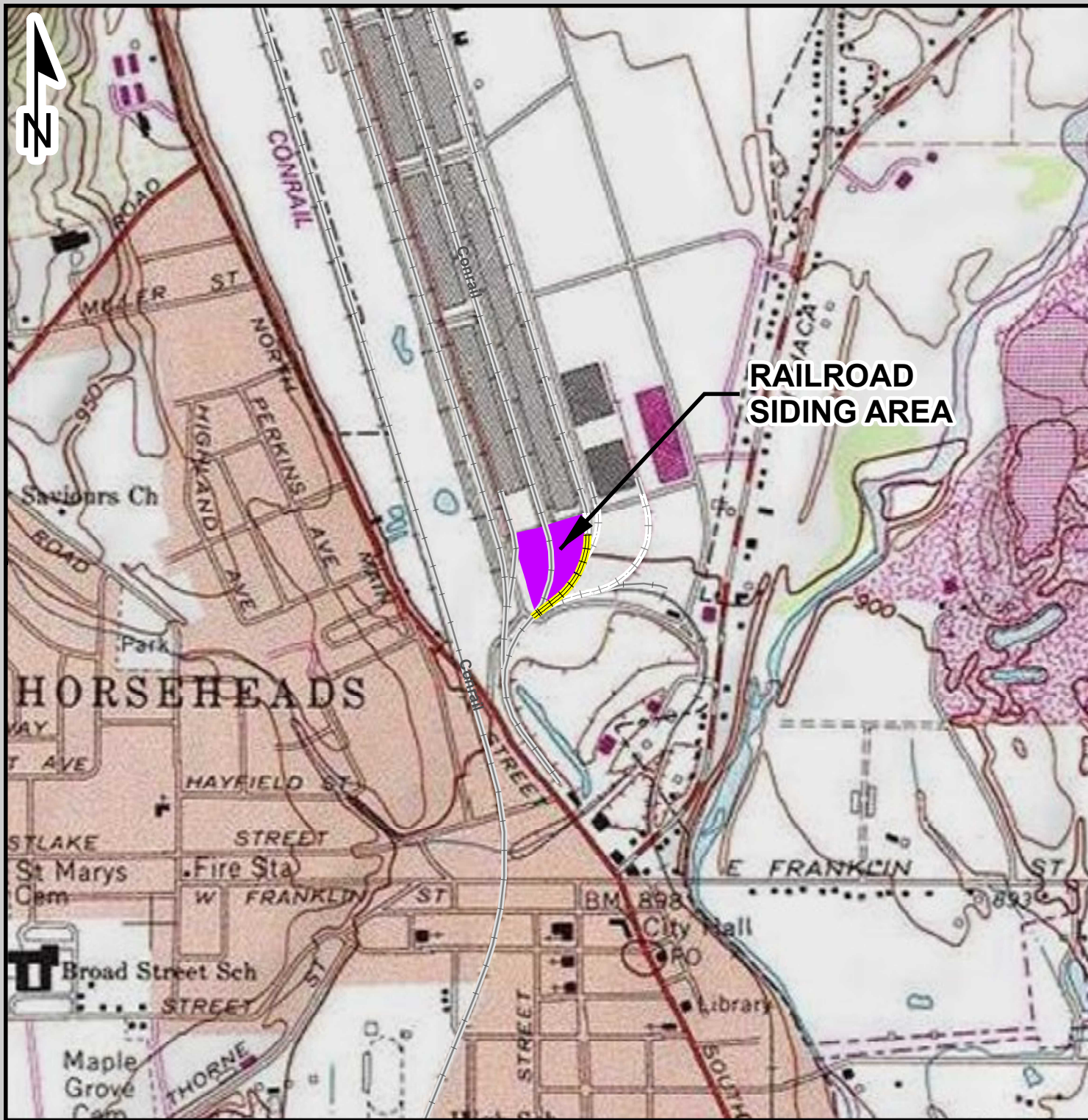
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QAQC: Steve Boddecker, Kevin Jenkins



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TIOGA EXTENSION - USGS QUAD MAPS **RAIL ROAD SIDING IN HORSEHEADS**



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Empire Pipeline
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Project: 092023-226

Print Date: September 21, 2010

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Author: Maggie Norman

QAQC: Steve Boddecker, Kevin Jenkins

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Appendix B

Additional Temporary Workspace Areas

Additional Temporary Workspace Areas						
Project Facility	County, State	Begin MP	Proposed Use Justification	Dimensions ¹ (feet)	Acreage	Land Use
Tioga County Extension Section	Tioga County, PA	0.00	Topsoil segregation	25 x 400	0.23	Agricultural
		0.10	Road crossing	50 x 260	0.29	Agricultural
		0.12	Road crossing	90 x 200	0.36	Agricultural
	Steuben County, NY	0.17	Road crossing/ Topsoil segregation	50 x 200, 25 x 670	0.61	Agricultural
		0.17	Road crossing/ Topsoil segregation	65 x 200, 25 x 590	0.64	Agricultural
		0.34	Topsoil segregation	25 x 2190	1.26	Agricultural
		0.35	Topsoil segregation	25 x 1445	0.83	Agricultural
		0.79	Topsoil segregation	25 x 890	0.51	Agricultural
		0.79	Topsoil segregation	25 x 895	0.51	Agricultural
		1.13	Side Slope/Road crossing	25 x 1335, 50 x 200	1.00	Woodland
		1.44	Road/wetland/ waterbody crossing	50 x 70	0.08	Woodland
		1.49	Wetland/waterbody/ foreign pipeline crossing and side slope	50 x 1140	1.31	Woodland
		1.74	Topsoil segregation	25 x 1590	0.91	Agricultural
		1.74	Topsoil segregation	25 x 580	0.33	Agricultural
		2.18	Topsoil segregation	25 x 1070	0.61	Agricultural
		2.18	Road crossing/ Topsoil segregation	25 x 660, 50 x 200	0.61	Agricultural
		2.36	Road/wetland crossing	50 x 130	0.15	Woodland
		2.47	Topsoil segregation	25 x 435	0.25	Agricultural
		2.48	Topsoil segregation	25 x 1785	1.02	Agricultural
		2.58	Topsoil segregation	25 x 320	0.18	Agricultural
		2.65	Topsoil segregation	25 x 2180	1.25	Agricultural
		2.83	Topsoil segregation	25 x 50	0.03	Agricultural
		2.83	Topsoil segregation	25 x 1230	0.71	Agricultural
		2.86	Topsoil segregation	25 x 1040	0.60	Agricultural
		3.19	Road crossing	25 x 100	0.06	Woodland
		3.19	Road crossing	25 x 70	0.04	Woodland
		3.35	Side slope	50 x 590	0.68	Woodland
		3.52	Topsoil segregation/ foreign pipeline crossing	25 x 920, 50 x 100	0.64	Agricultural

Additional Temporary Workspace Areas						
Project Facility	County, State	Begin MP	Proposed Use Justification	Dimensions ¹ (feet)	Acreage	Land Use
		3.78	Topsoil segregation	50 x 110	0.13	Agricultural
		3.84	Road crossing	50 x 250	0.29	Upland Scrub/Shrub
		3.90	Road crossing/ Topsoil segregation	50 x 200, 25 x 445	0.48	Agricultural
		4.09	Topsoil segregation	25 x 1050	0.60	Agricultural
		4.12	Topsoil segregation	25 x 580	0.33	Agricultural
		4.35	Road crossing/ Topsoil segregation	25 x 1615, 50 x 200	1.16	Agricultural
		4.35	Road crossing/ Topsoil segregation	25 x 1610, 75 x 200	1.27	Agricultural
		4.71	Road crossing/ Intermediate Staging Area	50 x 200	0.23	Woodland
		4.71	Road crossing	75 x 200	0.34	Woodland
		5.07	Topsoil segregation	25 x 320	0.18	Agricultural
		5.07	Topsoil segregation	25 x 320	0.18	Agricultural
		5.14	Topsoil segregation	25 x 1620	0.93	Agricultural
		5.14	Road crossing/ Topsoil segregation	25 x 1390, 50 x 250	1.08	Agricultural
		5.46	Topsoil segregation	25 x 1190	0.68	Agricultural
		5.47	Road crossing/ Topsoil segregation	50 x 100, 25 x 1060	0.72	Agricultural
		5.70	Topsoil segregation	25 x 630	0.36	Agricultural
		5.70	Topsoil segregation	25 x 640	0.37	Agricultural
		5.95	Road crossing/ Topsoil segregation	25 x 1180, 50 x 125	0.82	Agricultural
		5.95	Road crossing/ Topsoil segregation	25 x 1100, 50 x 200	0.86	Agricultural
		6.20	Road crossing/ Topsoil segregation	25 x 1220, 50 x 220	0.95	Agricultural
		6.21	Road crossing/ Topsoil segregation	25 x 1090, 75 x 200	0.97	Agricultural
		6.48	Topsoil segregation	25 x 760	0.44	Agricultural
		6.48	Topsoil segregation	25 x 690	0.40	Agricultural
		6.69	Foreign pipeline crossing	25 x 150	0.09	Woodland
		7.00	Road crossing/ Topsoil segregation	25 x 410, 50 x 100	0.35	Agricultural
		7.01	Topsoil segregation	25 x 260	0.15	Agricultural

Additional Temporary Workspace Areas						
Project Facility	County, State	Begin MP	Proposed Use Justification	Dimensions ¹ (feet)	Acreage	Land Use
		7.08	Road/wetland crossing	50 x 250	0.29	Agricultural
		7.12	Road crossing/ Topsoil segregation	50 x 200, 25 x 1790	1.26	Agricultural
		7.36	Topsoil segregation	25 x 725	0.42	Agricultural
		7.52	Topsoil segregation	25 x 170	0.10	Agricultural
		8.02	Side slope	25 x 210	0.12	Woodland
		8.67	Topsoil segregation/ foreign pipeline crossing	25 x 3090	1.77	Agricultural
		8.67	Topsoil segregation/ foreign pipeline crossing	25 x 2145	1.23	Agricultural
		8.67	HDD Pull back	150 x 3000	10.33	Agricultural
		9.10	Topsoil segregation	25 x 770	0.44	Agricultural
		9.25	HDD Staging area	Irregular Shape	2.03	Agricultural
		9.78	HDD Staging area	300 x 300	2.07	Upland Scrub/Shrub
		9.94	Side Slope	25 x 770	0.44	Woodland
		10.30	Side Slope	25 x 250	0.14	Woodland
		11.23	Side Slope/wetland crossing	25 x 685	0.39	Woodland
		11.83	Wetland crossing/ Topsoil segregation	25 x 360	0.21	Agricultural
		12.16	Road crossing	50 x 150	0.17	Woodland
		12.23	Topsoil segregation	25 x 320	0.18	Agricultural
		12.23	Topsoil segregation	50 x 150, 25 x 195	0.28	Agricultural
		12.31	Topsoil segregation	25 x 400	0.23	Agricultural
		12.39	Side slope	25 x 210	0.12	Agricultural
		12.51	Staging Area	25 x 100	0.06	Woodland
		12.61	Staging Area	25 x 85	0.05	Woodland
		12.66	Topsoil segregation/ Teppco Pipeline Crossover	25 x 535	0.31	Agricultural
		12.66	Topsoil segregation/ Teppco Pipeline Crossover/Side slope	25 x 1660	0.95	Agricultural/ Woodland
		12.88	Side slope/ Teppco Pipeline Crossover	25 x 1235	0.71	Woodland
		13.28	Road Crossing	25 x 125	0.07	Upland Scrub/Shrub
		13.28	Road Crossing	25 x 80	0.05	Upland Scrub/Shrub
		13.31	Road crossing	25 x 330	0.19	Upland Scrub/Shrub

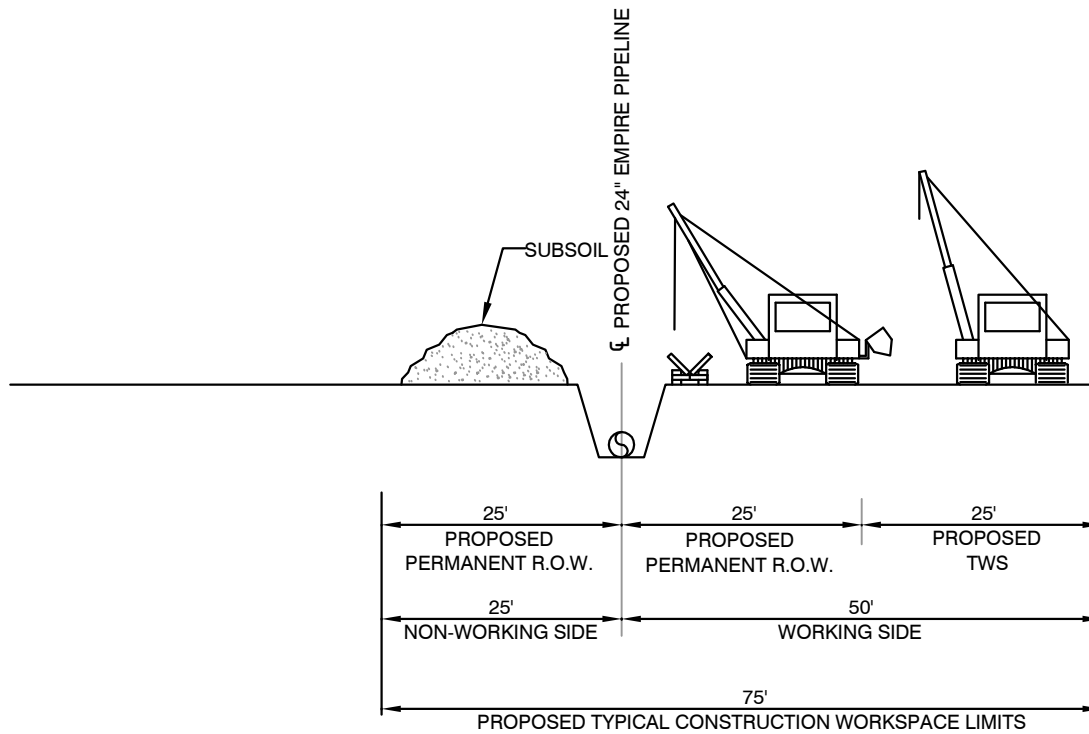
Additional Temporary Workspace Areas						
Project Facility	County, State	Begin MP	Proposed Use Justification	Dimensions ¹ (feet)	Acreage	Land Use
		13.31	Road crossing	25 x 280	0.16	Upland Scrub/Shrub
		13.39	Topsoil segregation	25 x 830	0.48	Agricultural
		13.66	Topsoil segregation	30 x 265	0.18	Agricultural
		13.77	Topsoil segregation	25 x 650	0.37	Agricultural
		14.04	Teppco Pipeline Crossover	25 x 470	0.27	Woodland
		14.04	Teppco Pipeline Crossover	25 x 245	0.14	Woodland
		14.62	Teppco Pipeline Crossover/Road Crossing	50 x 220, 25 x 170	0.35	Woodland
		14.62	Teppco Pipeline Crossover	50 x 300	0.34	Woodland
		14.71	Road crossing	25 x 200	0.11	Upland Scrub/Shrub
		14.90	Tie-In Facility	120 x 275	0.76	Woodland
Subtotal					57.83	
Center at Horseheads Pipeyard	Chemung County, NY	–	Pipeyard		5.30	Urban/Industrial
Subtotal					5.30	
Lift and Lay Section	Ontario County, NY	0.00	Tie-In Facility	50 x 110, 145 x 200	0.79	Residential
		0.05	Staging, Road Crossing	35 x 120, 55 x 415, 220 x 270	1.98	Residential
		0.32	Access from Franlee Lane	40 x 180	0.17	Residential
		0.54	Topsoil segregation and staging	75 x 1400	2.41	Agricultural
		0.54	Topsoil segregation	15 x 1400	0.48	Agricultural
		1.36	Tie-In Facility	70 x 100, 85 x 180, 130 x 160	0.99	Upland Scrub/Shrub
Subtotal					6.82	
Tennessee Gas Pipeline Interconnect	Ontario County, NY	–	–	–	–	–
Subtotal					–	
Oakfield Compressor Station	Genesee County, NY	–	–	–	–	–
Project Total					69.95	
1 ATWS dimensions are approximate, in some cases, for workspaces with irregular shapes. Acreage column is based on actual workspace areas.						

Appendix C

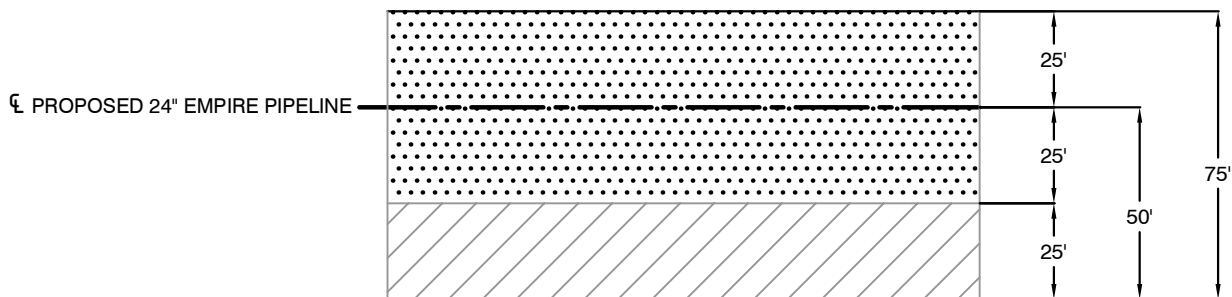
Typical Pipeline Construction Right-of-Way Configuration Diagrams

**Empire Pipeline
Tioga County Extension Project
Typical Construction R-O-W Configuration Locations
August 24, 2010**

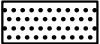
TIOGA COUNTY EXTENSION SECTION				
	FIGURE NOS.	BEGIN M.P.	END M.P.	DESCRIPTION
1	1A	0.00	0.05	GREENFIELD - EAST WORKING SIDE WITH ATWS FOR TOPSOIL SEGREGATION
2	1	0.05	0.16	GREENFIELD - EAST WORKING SIDE
3	1C	0.16	0.36	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
4	1C	0.36	0.62	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
5	1A	0.62	0.76	GREENFIELD - EAST WORKING SIDE WITH ATWS FOR TOPSOIL SEGREGATION
6	1	0.76	0.80	GREENFIELD - EAST WORKING SIDE
7	1C	0.80	0.96	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
8	1	0.96	1.14	GREENFIELD - EAST WORKING SIDE
9	2	1.14	1.42	STEEP SLOPE / SIDE HILL EAST WORKING SIDE WITH ATWS
10	1A	1.42	1.50	GREENFIELD - EAST WORKING SIDE WITH ATWS FOR TOPSOIL SEGREGATION
11	2	1.50	1.70	STEEP SLOPE / SIDE HILL EAST WORKING SIDE WITH ATWS
12	1	1.70	1.75	GREENFIELD - EAST WORKING SIDE
13	1C	1.75	1.86	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
14	1A	1.86	2.05	GREENFIELD - EAST WORKING SIDE WITH ATWS FOR TOPSOIL SEGREGATION
15	1	2.05	2.18	GREENFIELD - EAST WORKING SIDE
16	1C	2.18	2.36	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
17	1	2.36	2.47	GREENFIELD - EAST WORKING SIDE
18	1C	2.47	3.06	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
19	1	3.06	3.34	GREENFIELD - EAST WORKING SIDE
20	2	3.34	3.44	STEEP SLOPE / SIDE HILL EAST WORKING SIDE WITH ATWS
21	1	3.44	3.53	GREENFIELD - EAST WORKING SIDE
22	1A	3.53	3.72	GREENFIELD - EAST WORKING SIDE WITH ATWS FOR TOPSOIL SEGREGATION
23	1	3.72	3.90	GREENFIELD - EAST WORKING SIDE
24	1A	3.90	4.04	GREENFIELD - EAST WORKING SIDE WITH ATWS FOR TOPSOIL SEGREGATION
25	1	4.04	4.10	GREENFIELD - EAST WORKING SIDE
26	1C	4.10	4.28	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
27	1	4.28	4.36	GREENFIELD - EAST WORKING SIDE
28	1C	4.36	4.71	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
29	1	4.71	5.07	GREENFIELD - EAST WORKING SIDE
30	1C	5.07	5.81	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
31	1	5.81	5.95	GREENFIELD - EAST WORKING SIDE
32	1C	5.95	6.47	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
33	1	6.47	6.49	GREENFIELD - EAST WORKING SIDE
34	1C	6.49	6.63	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
35	1	6.63	7.00	GREENFIELD - EAST WORKING SIDE
36	1C	7.00	7.12	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
37	1A	7.12	7.36	GREENFIELD - EAST WORKING SIDE WITH ATWS FOR TOPSOIL SEGREGATION
38	1C	7.36	7.50	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
39	1	7.50	8.68	GREENFIELD - EAST WORKING SIDE
40	1C	8.68	9.25	GREENFIELD - EAST WORKING SIDE WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION
41	N/A	9.25	9.84	HDD
42	1	9.84	9.92	GREENFIELD - EAST WORKING SIDE
43	3	9.92	9.95	TEPPCO CO-LOCATION EAST SIDE
44	3D	9.95	10.09	TEPPCO CO-LOCATION EAST SIDE WITH ATWS FOR STEEP SLOPE / SIDE HILL
45	3	10.09	10.29	TEPPCO CO-LOCATION EAST SIDE
46	3D	10.29	10.34	TEPPCO CO-LOCATION EAST SIDE WITH ATWS FOR STEEP SLOPE / SIDE HILL
47	3	10.34	11.35	TEPPCO CO-LOCATION EAST SIDE
48	3	11.35	11.82	TEPPCO CO-LOCATION EAST SIDE
49	1B	11.82	11.90	GREENFIELD - EAST WORKING SIDE WITH ATWS O WEST SIDE FOR TOPSOIL SEGREGATION
50	1	11.90	12.23	GREENFIELD - EAST WORKING SIDE
51	3	12.23	12.30	TEPPCO CO-LOCATION EAST SIDE
52	3B	12.30	12.43	TEPPCO CO-LOCATION EAST SIDE WITH ATWS FOR TOPSOIL SEGREGATION
53	3	12.43	12.70	TEPPCO CO-LOCATION EAST SIDE
54	3C	12.70	12.79	TEPPCO CO-LOCATION WEST SIDE WITH ATWS FOR TOPSOIL SEGREGATION
55	3E	12.79	12.94	TEPPCO CO-LOCATION WEST SIDE WITH ATWS FOR STEEP SLOPE / SIDE HILL
56	3D	12.94	13.11	TEPPCO CO-LOCATION EAST SIDE WITH ATWS FOR STEEP SLOPE / SIDE HILL
57	3	13.11	13.38	TEPPCO CO-LOCATION EAST SIDE
58	3B	13.38	13.55	TEPPCO CO-LOCATION EAST SIDE WITH ATWS FOR TOPSOIL SEGREGATION
59	3	13.55	13.66	TEPPCO CO-LOCATION EAST SIDE
60	3B	13.66	13.71	TEPPCO CO-LOCATION EAST SIDE WITH ATWS FOR TOPSOIL SEGREGATION
61	3	13.71	13.77	TEPPCO CO-LOCATION EAST SIDE
62	3B	13.77	13.89	TEPPCO CO-LOCATION EAST SIDE WITH ATWS FOR TOPSOIL SEGREGATION
63	3	13.89	14.07	TEPPCO CO-LOCATION EAST SIDE
64	3A	14.07	14.66	TEPPCO CO-LOCATION WEST SIDE
65	3	14.66	14.90	TEPPCO CO-LOCATION EAST SIDE
LIFT AND LAY SECTION				
66	4	0.00	0.43	EXISTING PERMANENT RIGHT-OF-WAY
67	5	0.43	0.54	PROPOSED NEW PERMANENT RIGHT-OF-WAY TO SOUTH
68	6	0.54	0.80	PROPOSED NEW PERMANENT RIGHT-OF-WAY WITH ATWS ON NORTH SIDE FOR TOPSOIL SEGREGATION AND STAGING
69	5	0.80	1.36	PROPOSED NEW PERMANENT RIGHT-OF-WAY TO SOUTH



SCALE: 1"=20'



SCALE: 1"=50'

-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)



150 Lower Westfield Road
Holyoke, MA 01040

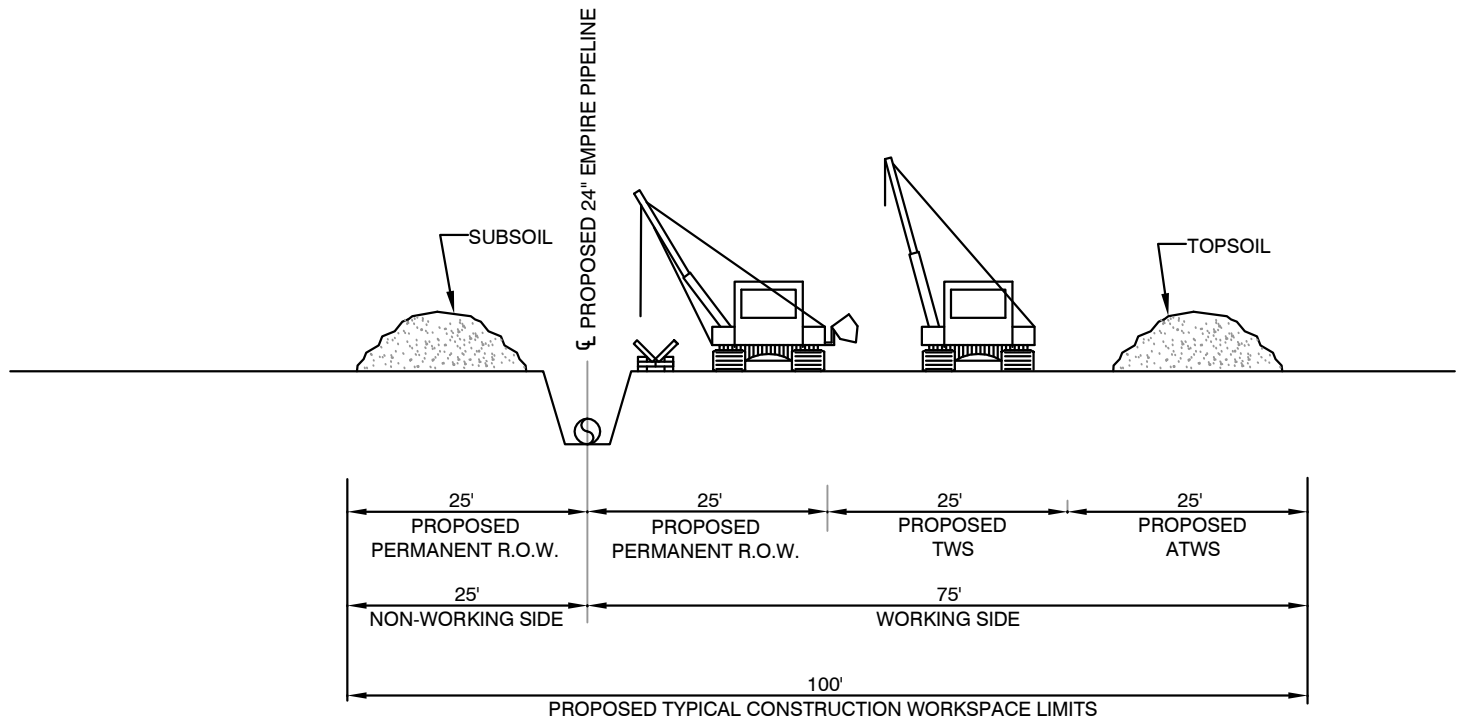
EMPIRE TIOGA COUNTY EXTENSION RIGHT-OF-WAY
TYPICAL CONFIGURATION
GREENFIELD - EAST WORKING SIDE

FIGURE #1

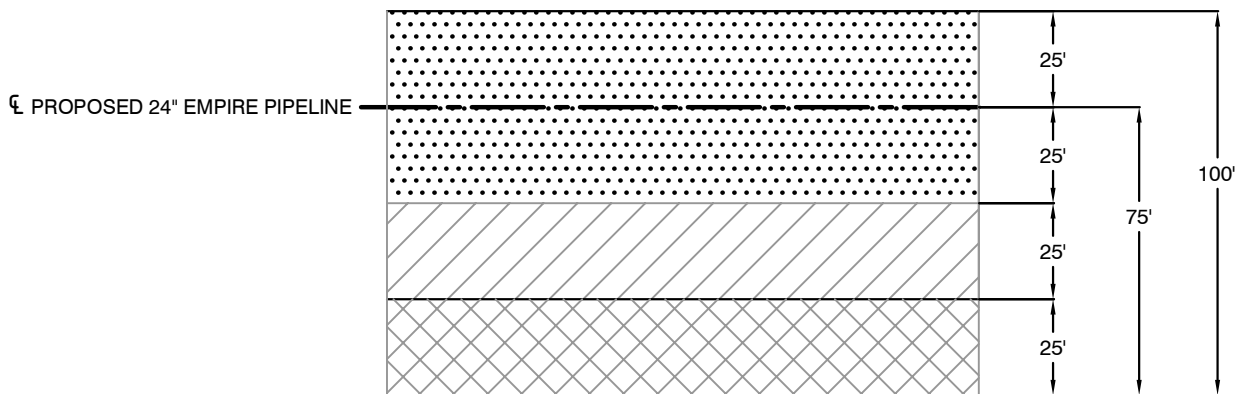
DATE: 08/24/2010

DWG. R.O.W. CONFIG 1

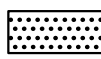
REV.



SCALE: 1"=20'



SCALE: 1"=50'

-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)



150 Lower Westfield Road
Holyoke, MA 01040

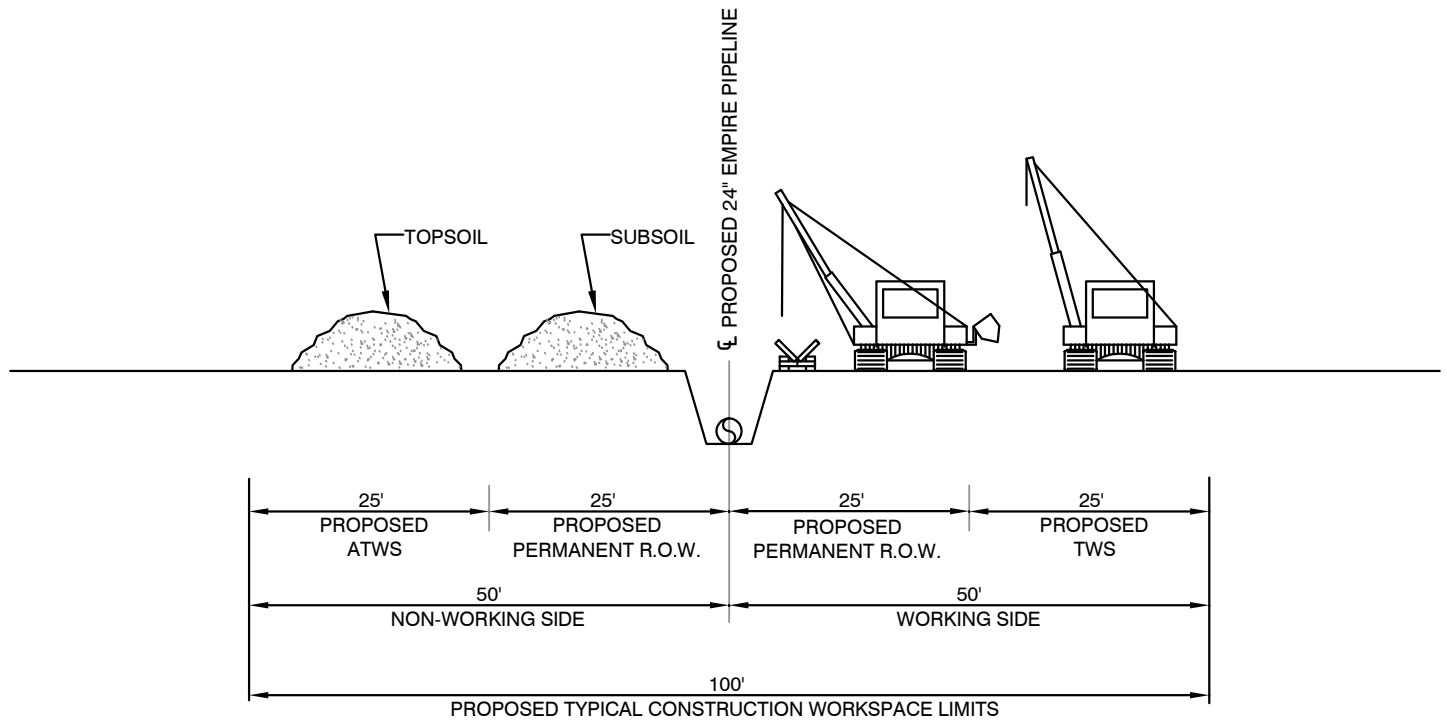
EMPIRE TIOGA COUNTY EXTENSION RIGHT-OF-WAY
TYPICAL CONFIGURATION
GREENFIELD - EAST WORKING SIDE
(WITH ATWS FOR TOPSOIL SEGREGATION)

FIGURE #1A

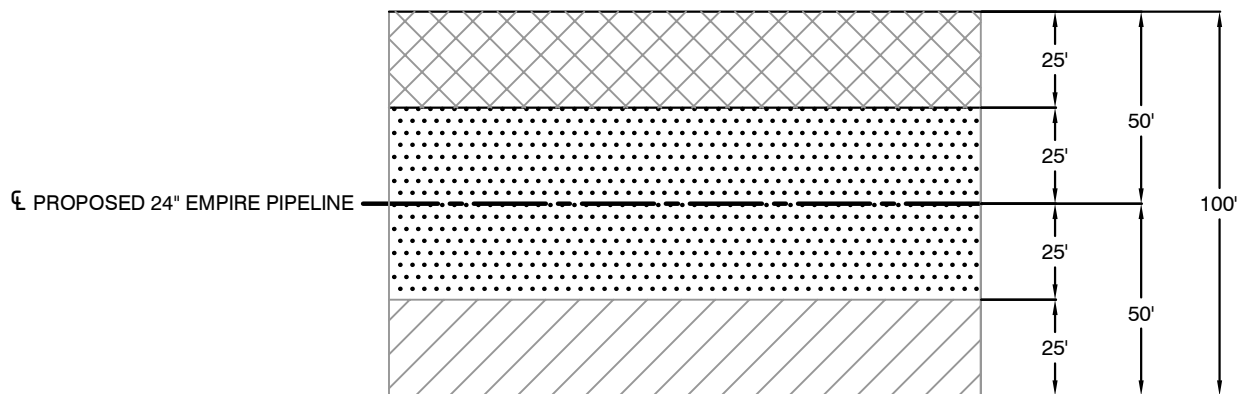
DATE: 08/24/2010

DWG. R.O.W. CONFIG 1A

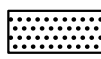
REV.



SCALE: 1"=20'



SCALE: 1"=50'

-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)



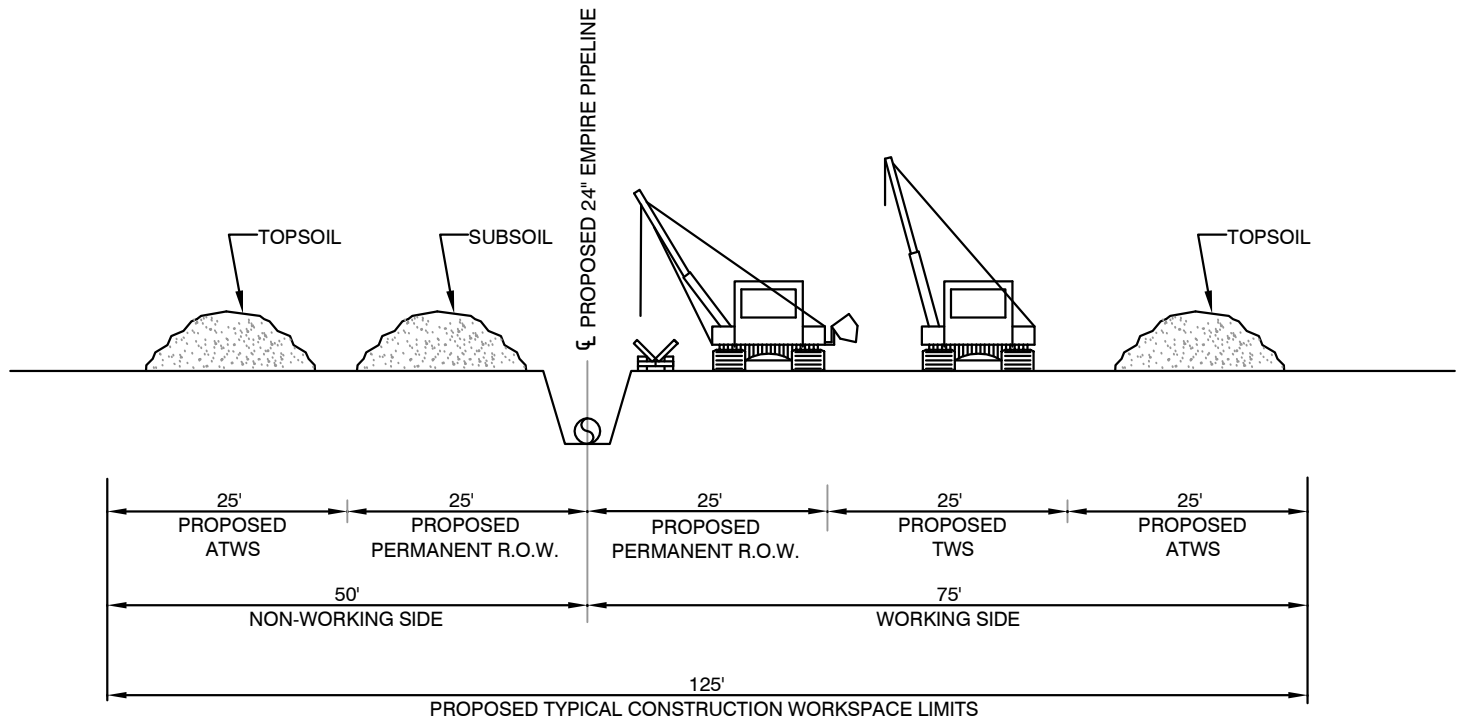
150 Lower Westfield Road
Holyoke, MA 01040

EMPIRE TIOGA COUNTY EXTENSION RIGHT-OF-WAY
TYPICAL CONFIGURATION
GREENFIELD - EAST WORKING SIDE
(WITH ATWS ON WEST SIDE FOR TOPSOIL SEGREGATION)

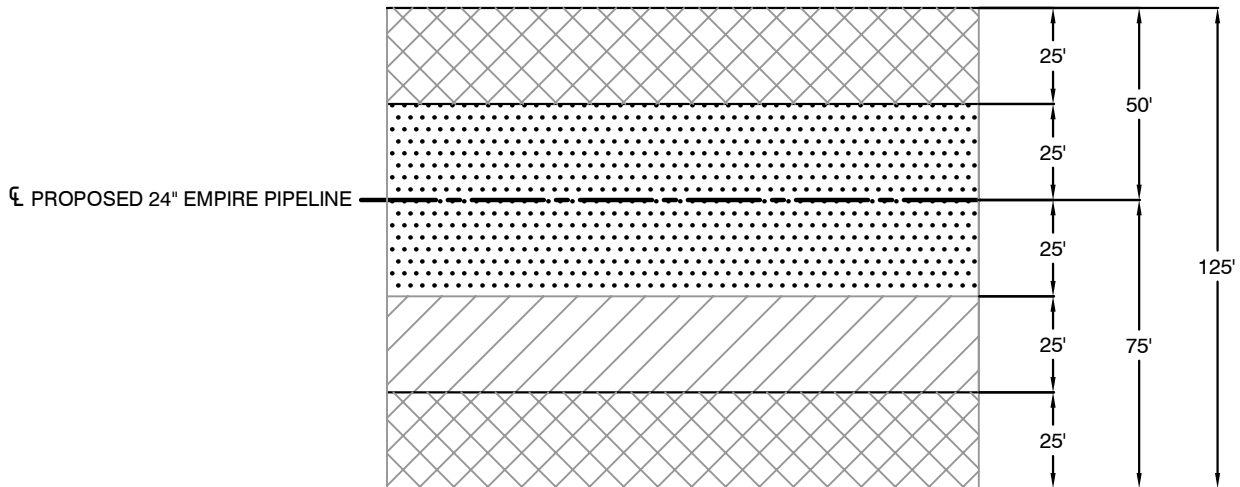
FIGURE #1B

DATE: 08/24/2010

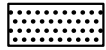
DWG. R.O.W. CONFIG 1B REV.



SCALE: 1"=20'



SCALE: 1"=50'

-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)



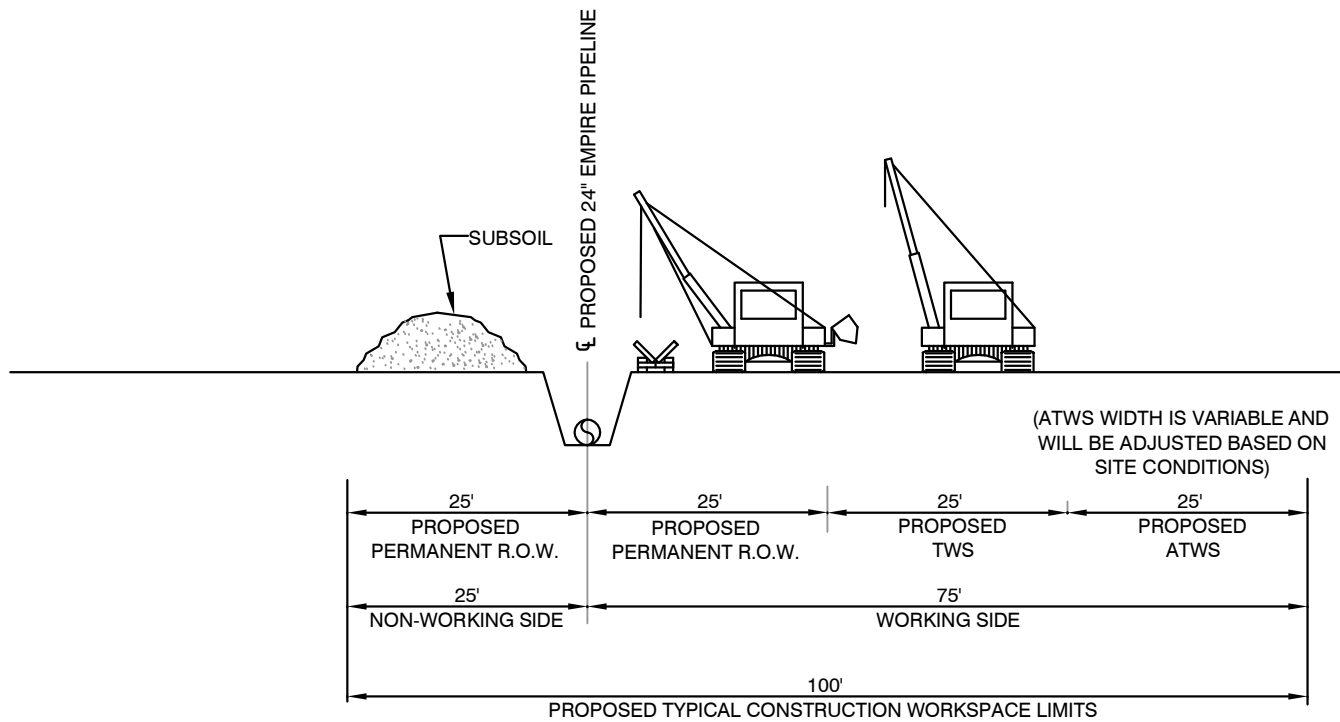
150 Lower Westfield Road
Holyoke, MA 01040

EMPIRE TIOGA COUNTY EXTENSION RIGHT-OF-WAY
TYPICAL CONFIGURATION
GREENFIELD - EAST WORKING SIDE
(WITH ATWS ON BOTH SIDES FOR TOPSOIL SEGREGATION)

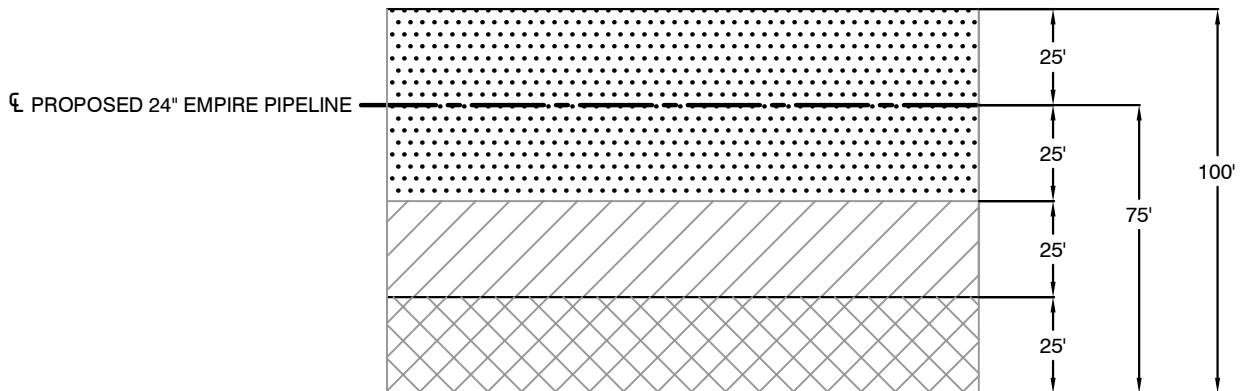
FIGURE #1C

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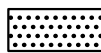
DWG. R.O.W. CONFIG 1C REV.



SCALE: 1"=20'



SCALE: 1"=50'

-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)



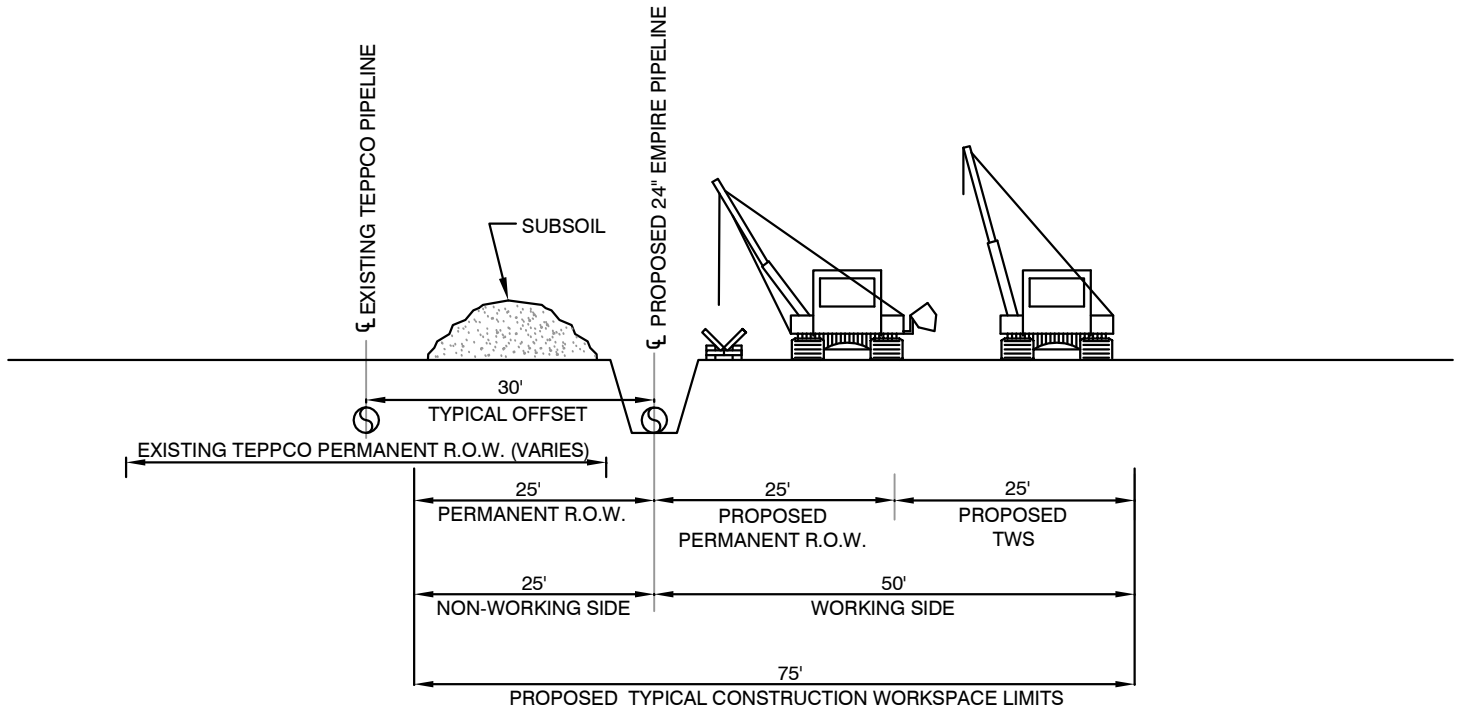
150 Lower Westfield Road
Holyoke, MA 01040

EMPIRE TIOGA COUNTY EXTENSION RIGHT-OF-WAY
TYPICAL CONFIGURATION
STEEP SLOPE / SIDE HILL
(EAST WORKING SIDE WITH ATWS)

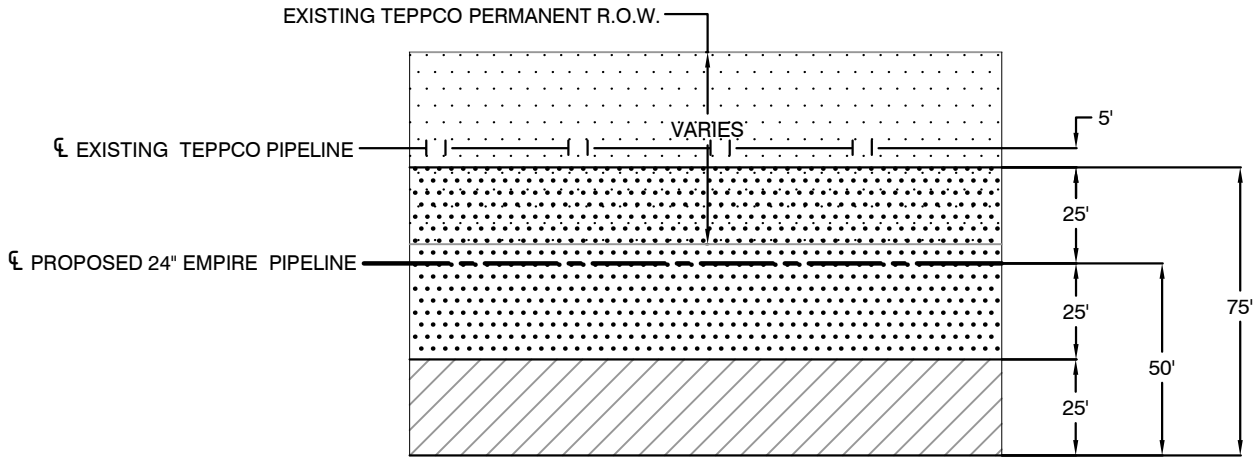
FIGURE #2

DATE: 08/24/2010

DWG. R.O.W. CONFIG 2 REV.



SCALE: 1"=20'



SCALE: 1"=50'

-  EXISTING PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)



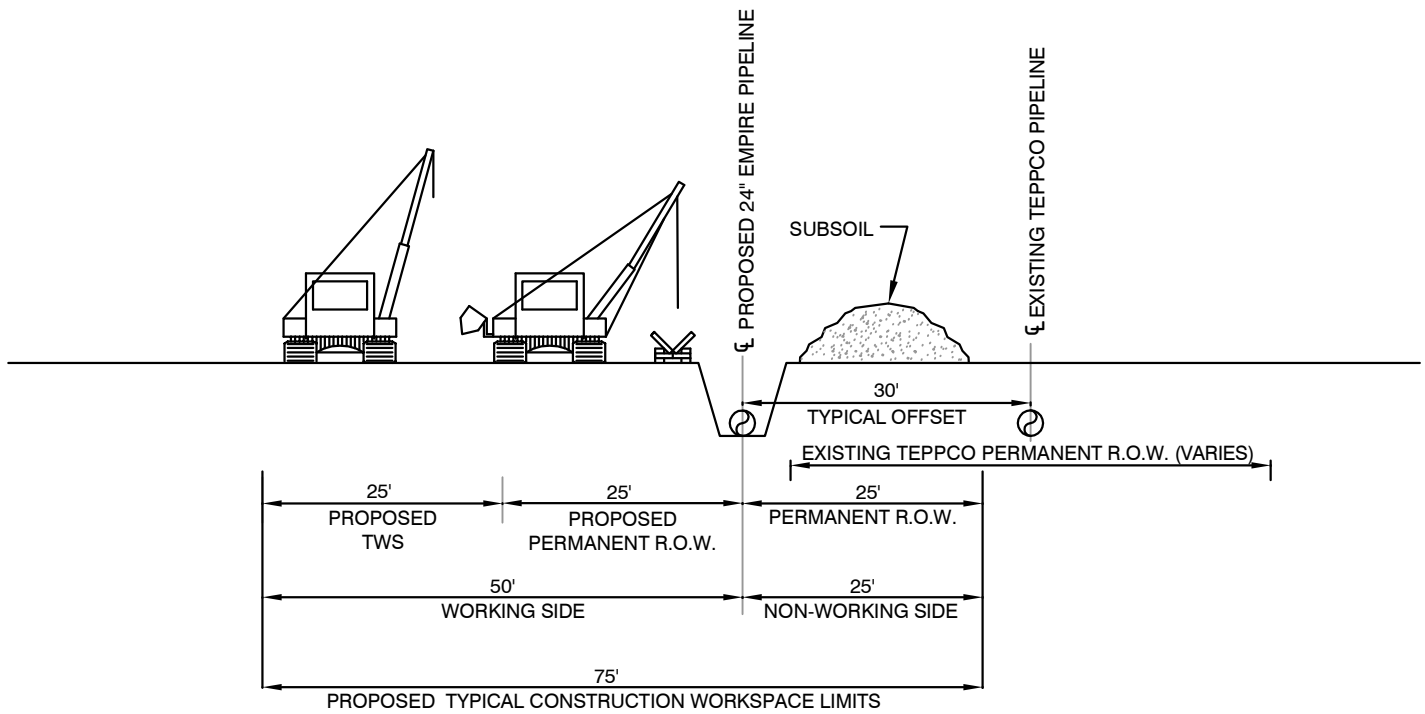
150 Lower Westfield Road
Holyoke, MA 01040

EMPIRE TIOGA COUNTY EXTENSION RIGHT-OF-WAY
TYPICAL CONFIGURATION
TEPPCO CO-LOCATION EAST SIDE

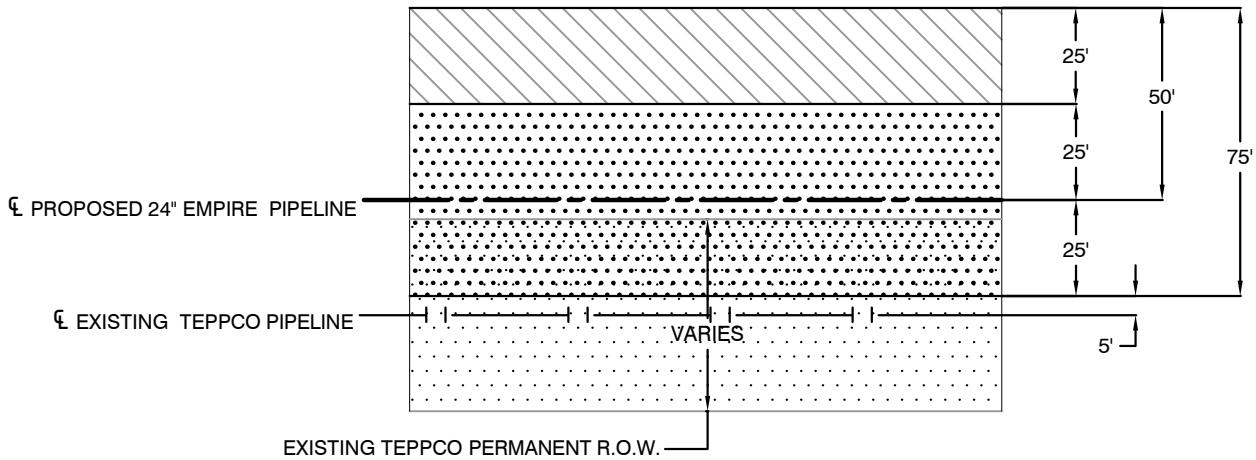
FIGURE #3

DATE: 08/24/2010

DWG. R.O.W. CONFIG 3 REV.



SCALE: 1"=20'



SCALE: 1"=50'

-  EXISTING PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)

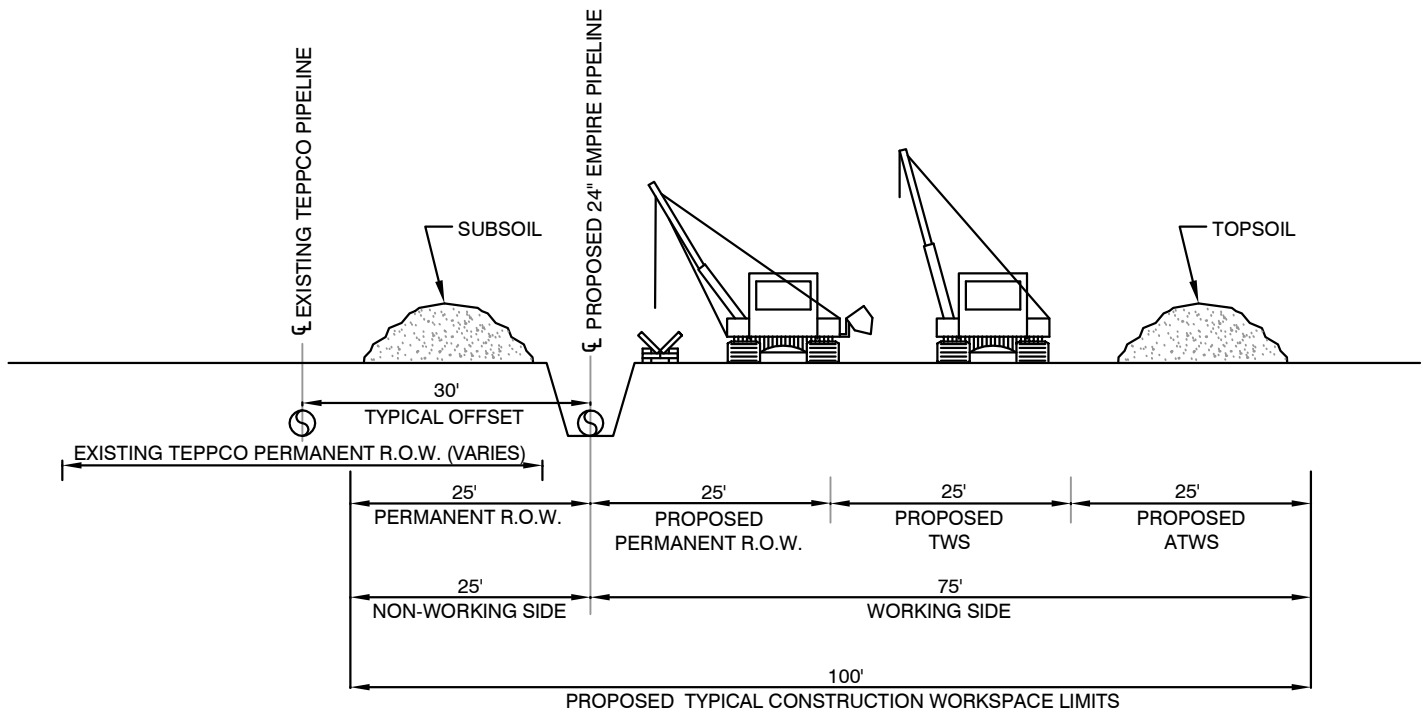


150 Lower Westfield Road
Holyoke, MA 01040

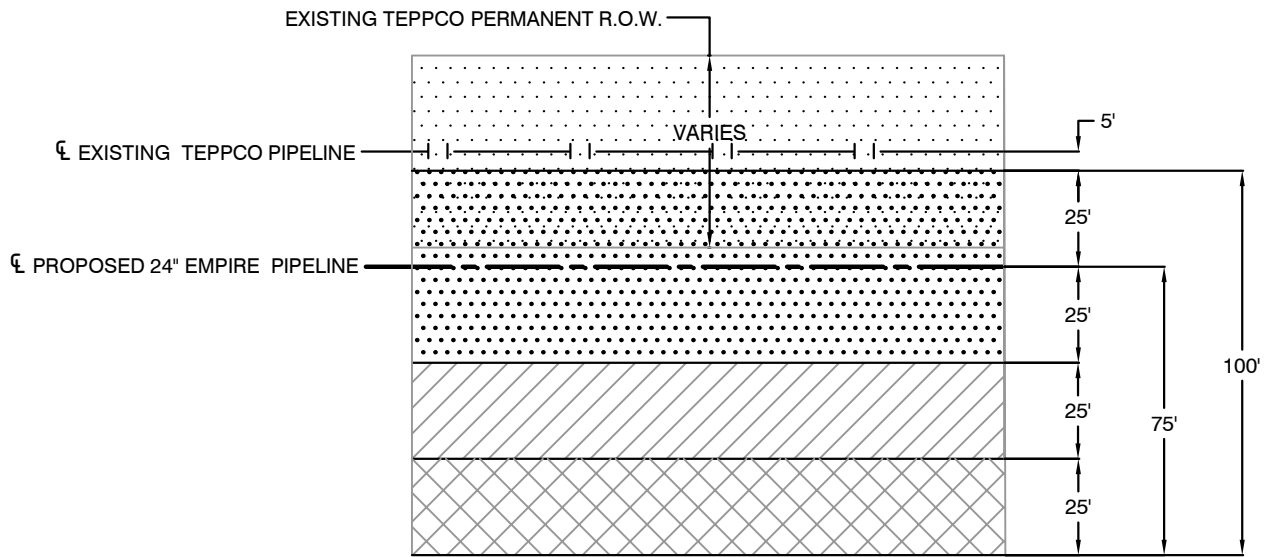
EMPIRE TIOGA COUNTY EXTENSION RIGHT-OF-WAY
TYPICAL CONFIGURATION
TEPPCO CO-LOCATION WEST SIDE

FIGURE #3A

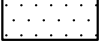
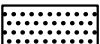
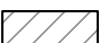
DATE: 08/24/2010
DWG. R.O.W. CONFIG 3A REV.



SCALE: 1"=20'



SCALE: 1"=50'

-  EXISTING PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)

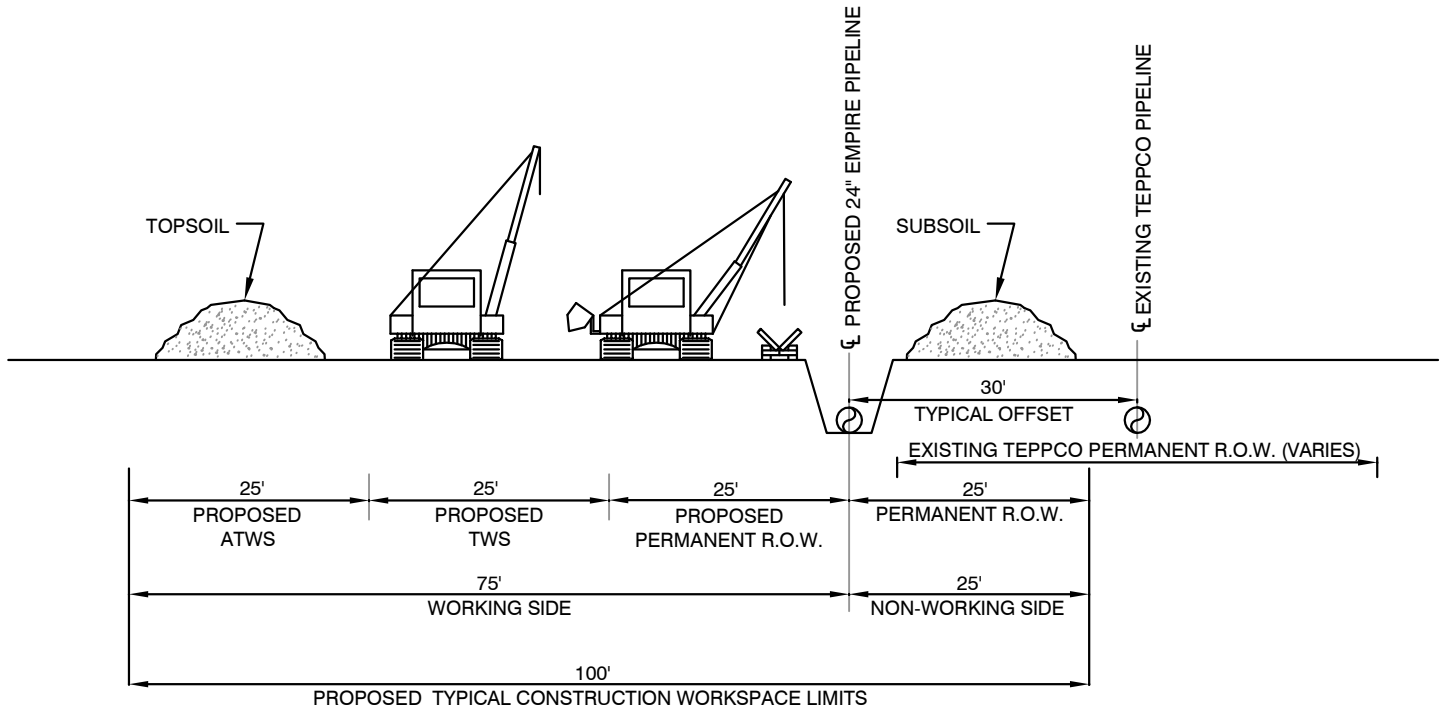


150 Lower Westfield Road
Holyoke, MA 01040

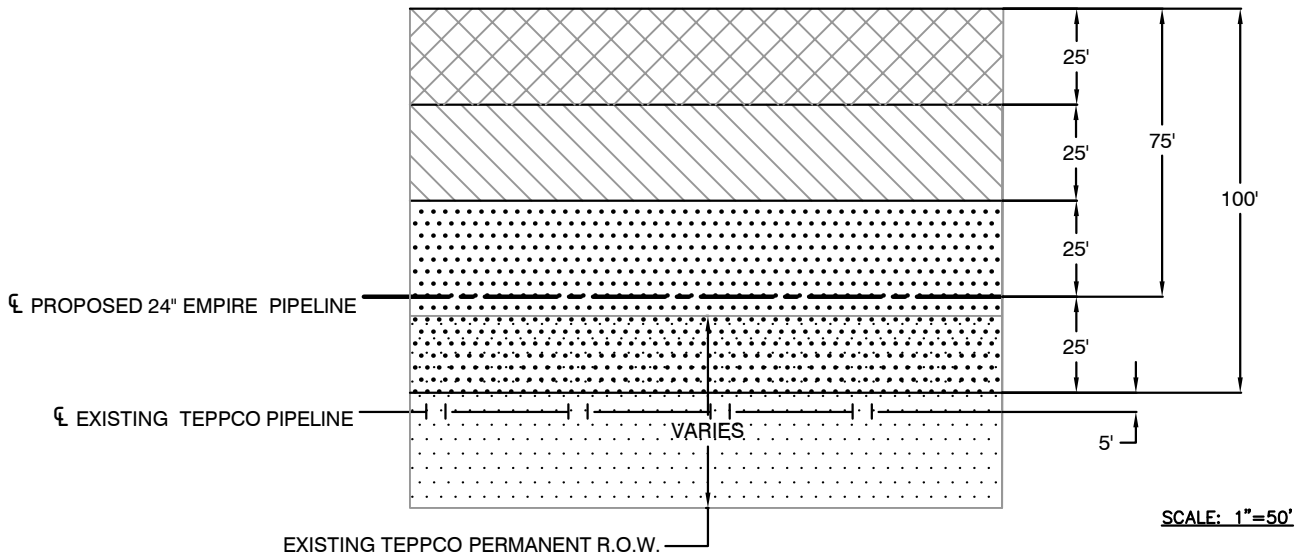
EMPIRE TIOGA COUNTY EXTENSION RIGHT-OF-WAY
TYPICAL CONFIGURATION
TEPPCO CO-LOCATION EAST SIDE
(WITH ATWS FOR TOPSOIL SEGREGATION)

FIGURE #3B

DATE: 08/24/2010
DWG.R.O.W. CONFIG 3B REV.



SCALE: 1"=20'



SCALE: 1"=50'

-  EXISTING PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)



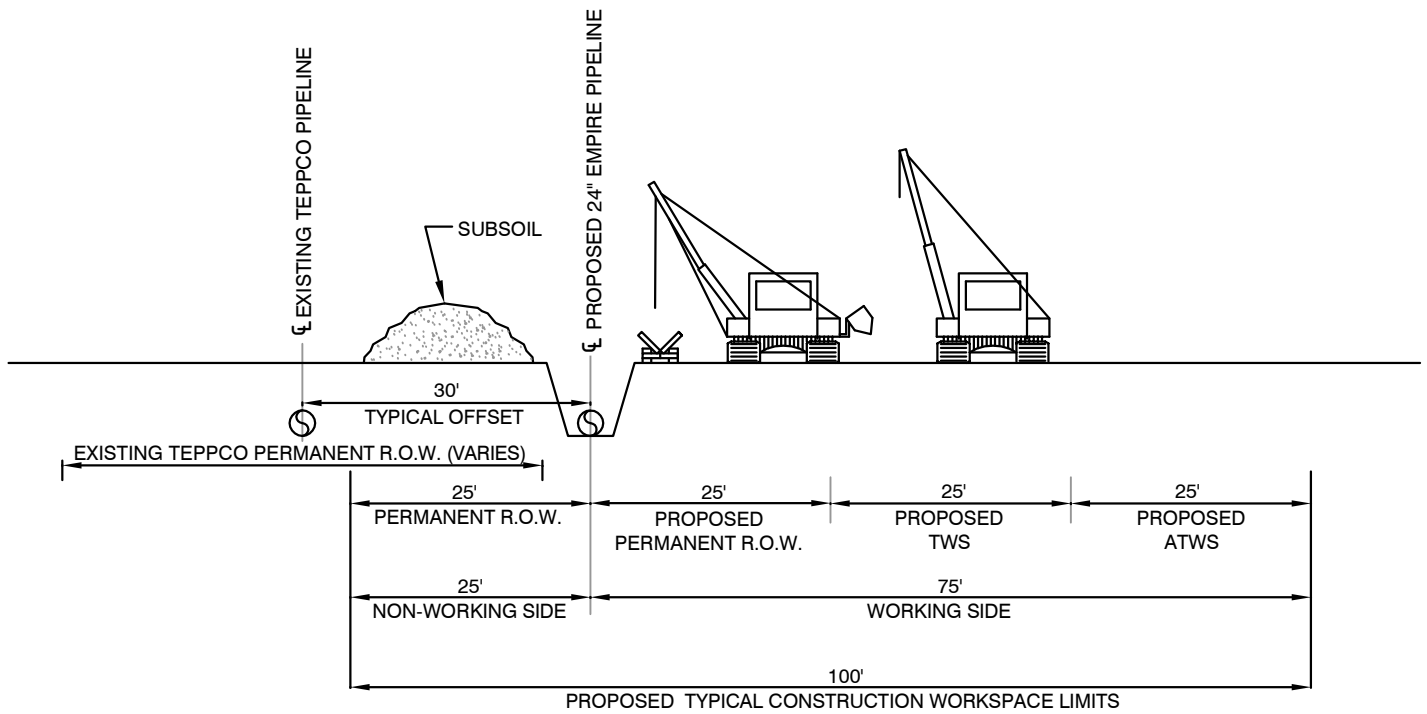
150 Lower Westfield Road
Holyoke, MA 01040

EMPIRE TIOGA COUNTY EXTENSION RIGHT-OF-WAY
TYPICAL CONFIGURATION
TEPPCO CO-LOCATION WEST SIDE
(WITH ATWS FOR TOPSOIL SEGREGATION)

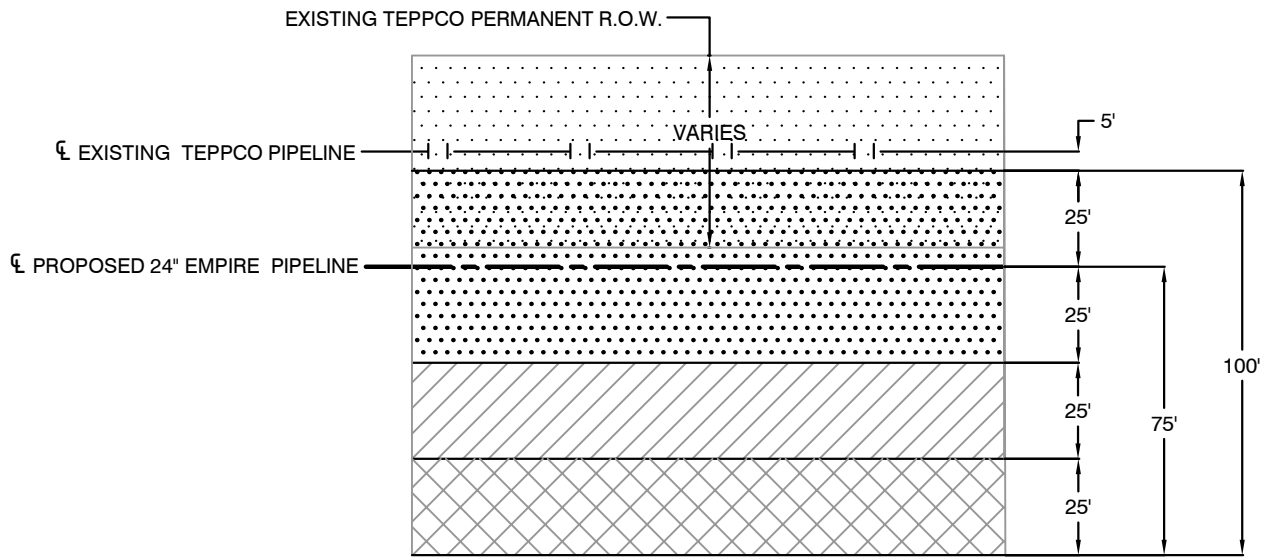
FIGURE #3C

DATE: 08/24/2010

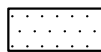
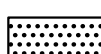
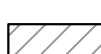
DWG. R.O.W. CONFIG 3C REV.



SCALE: 1"=20'



SCALE: 1"=50'

-  EXISTING PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)



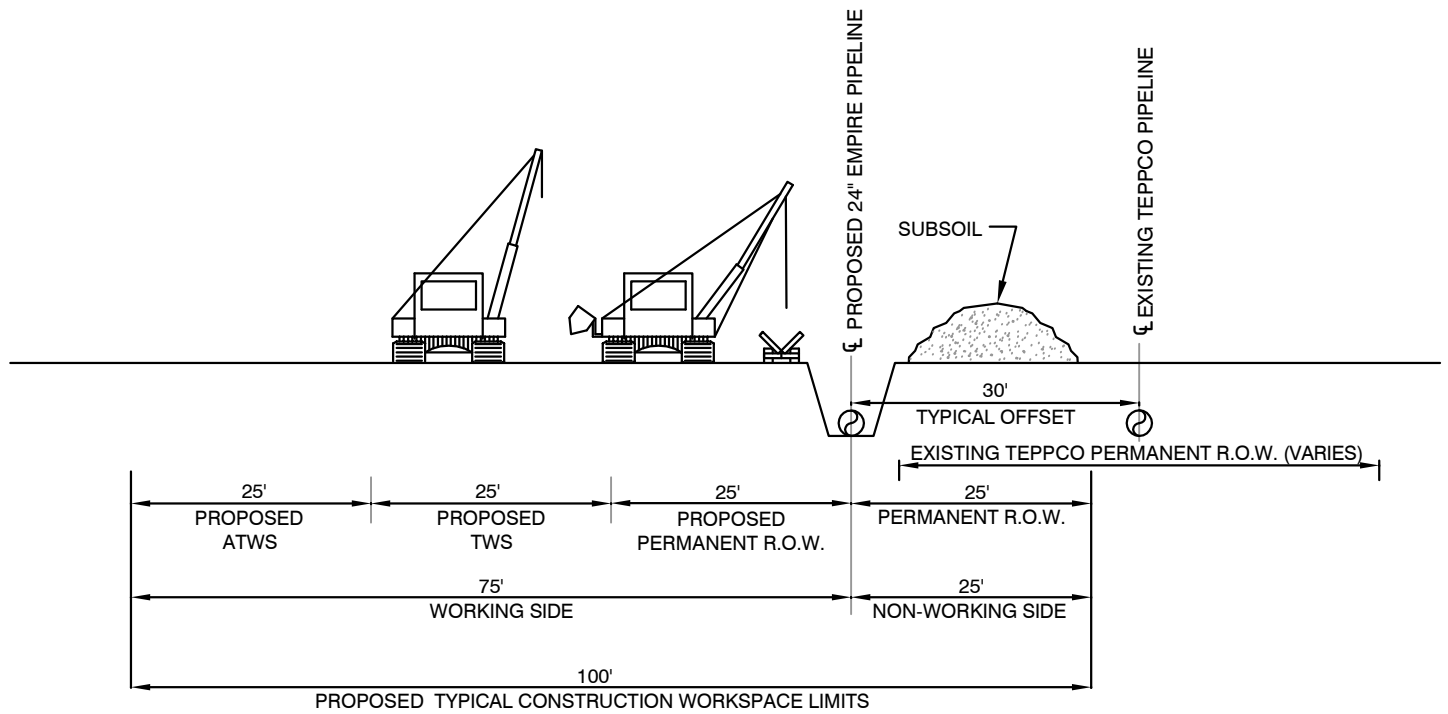
150 Lower Westfield Road
Holyoke, MA 01040

EMPIRE TIOGA COUNTY EXTENSION RIGHT-OF-WAY
TYPICAL CONFIGURATION
TEPPCO CO-LOCATION EAST SIDE
(WITH ATWS FOR STEEP SLOPE / SIDE HILL)

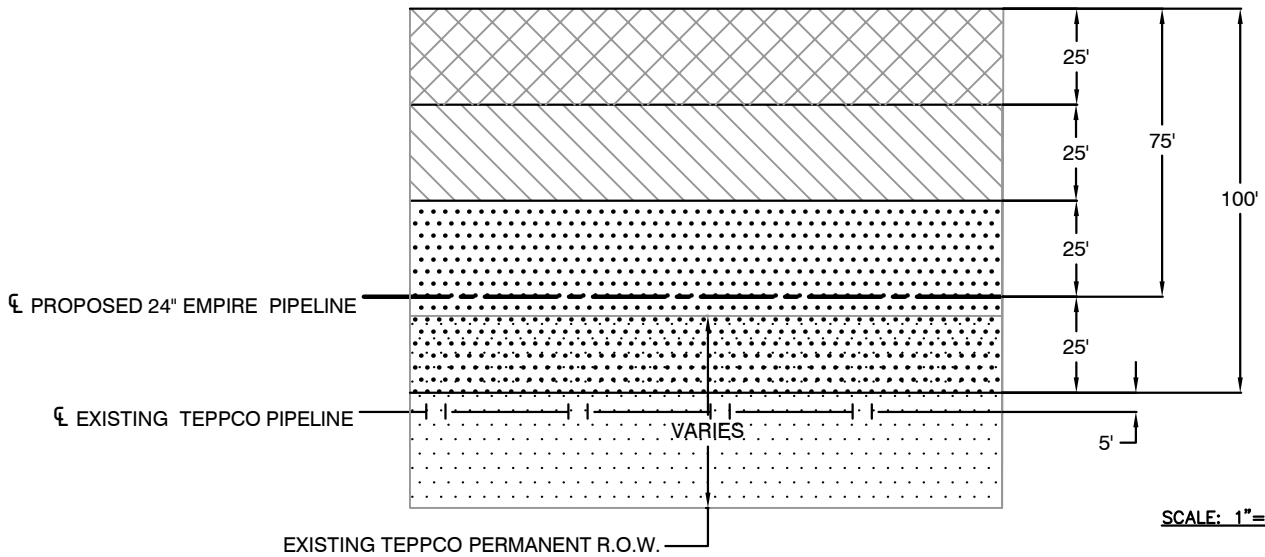
FIGURE #3D

DATE: 08/24/2010

DWG. R.O.W. CONFIG 3D REV.



SCALE: 1"=20'



SCALE: 1"=50'

-  EXISTING PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)



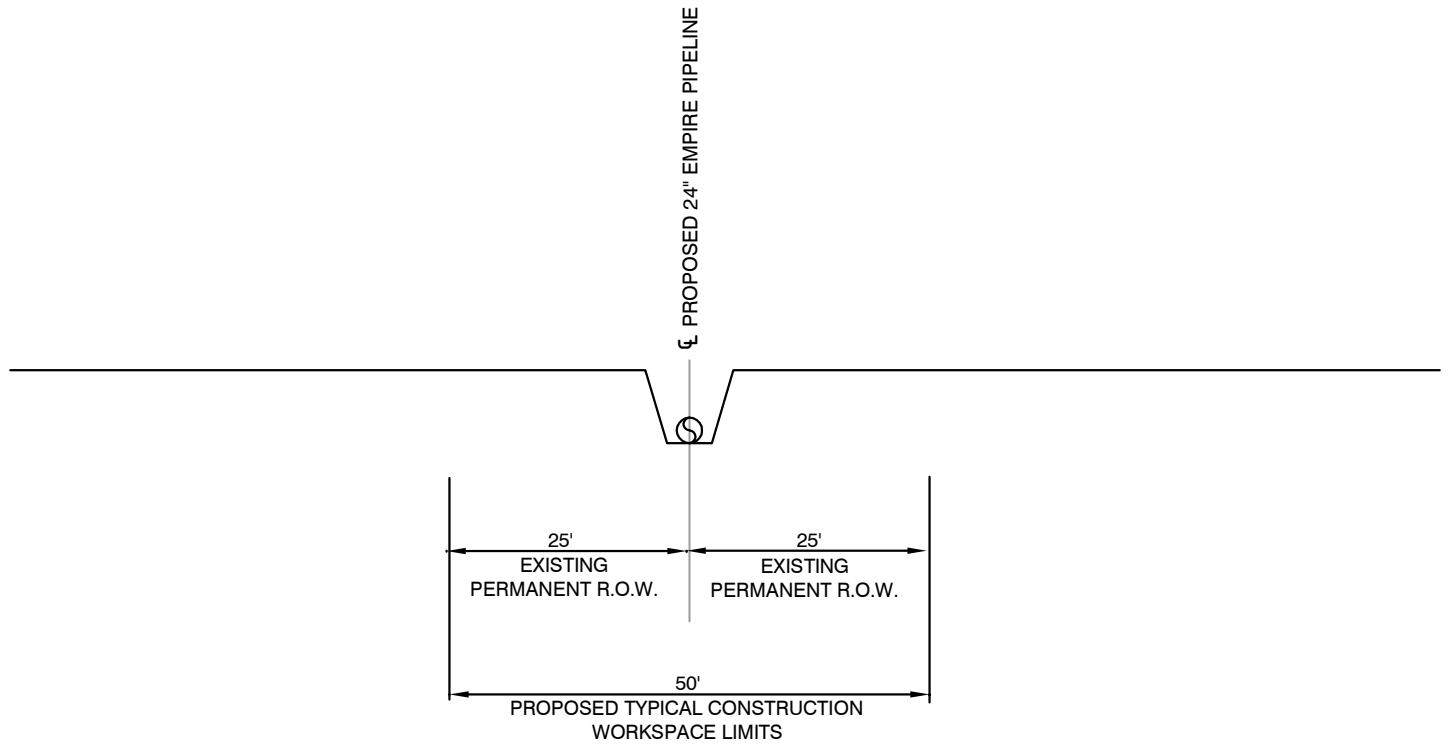
150 Lower Westfield Road
Holyoke, MA 01040

EMPIRE TIOGA COUNTY EXTENSION RIGHT-OF-WAY
TYPICAL CONFIGURATION
TEPPCO CO-LOCATION WEST SIDE
(WITH ATWS FOR STEEP SLOPE / SIDE HILL)

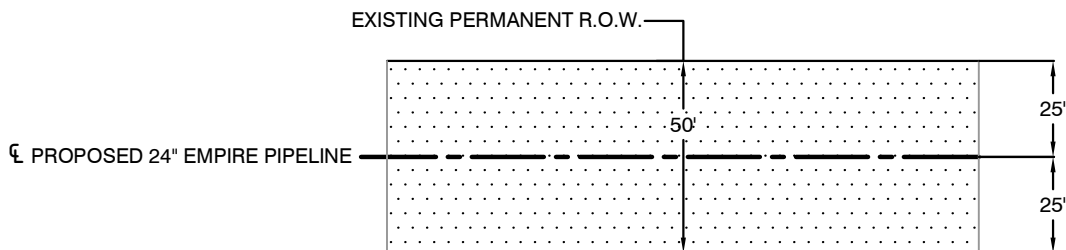
FIGURE #3E

DATE: 08/24/2010

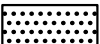
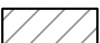
DWG. R.O.W. CONFIG 3E REV.



SCALE: 1"=20'



SCALE: 1"=50'

-  EXISTING PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)



150 Lower Westfield Road
Holyoke, MA 01040

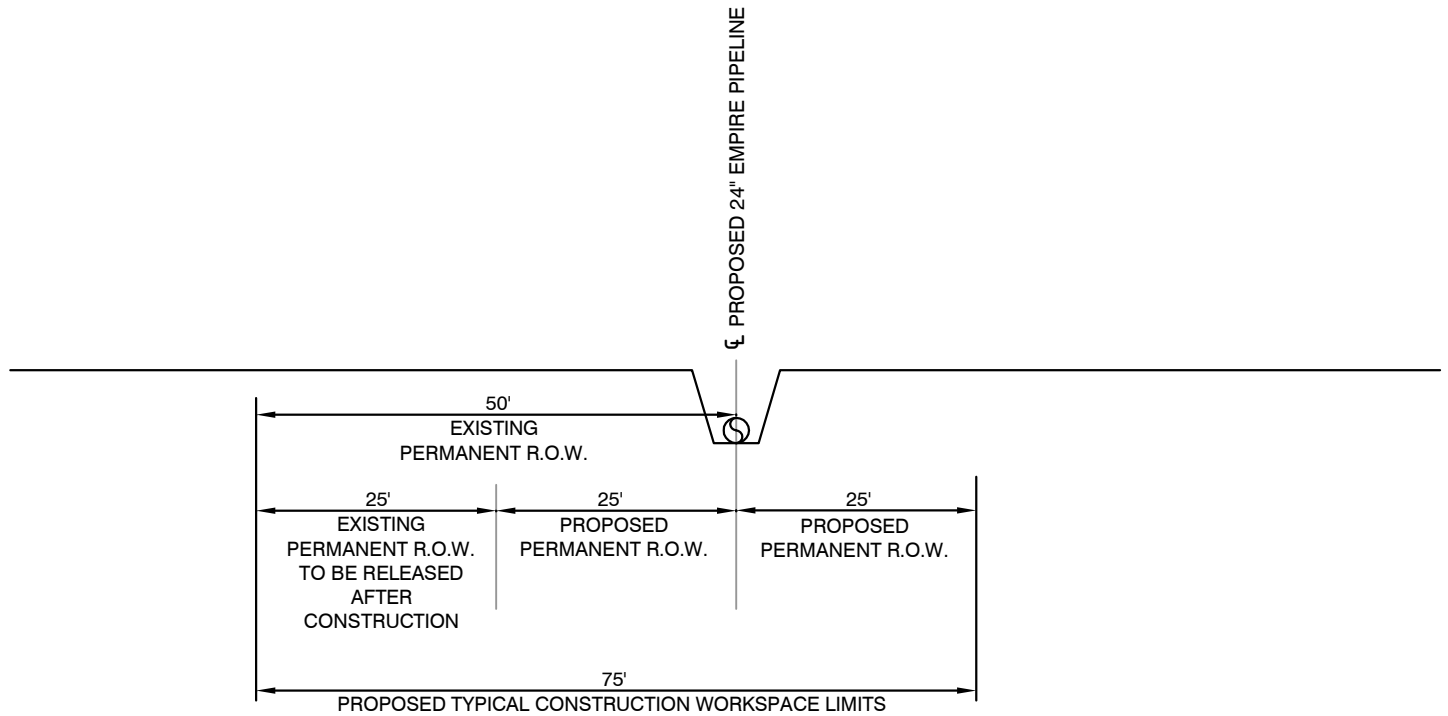
EMPIRE LIFT AND LAY SECTION RIGHT-OF-WAY
TYPICAL CONFIGURATION
EXISTING PERMANENT RIGHT-OF-WAY

FIGURE #4

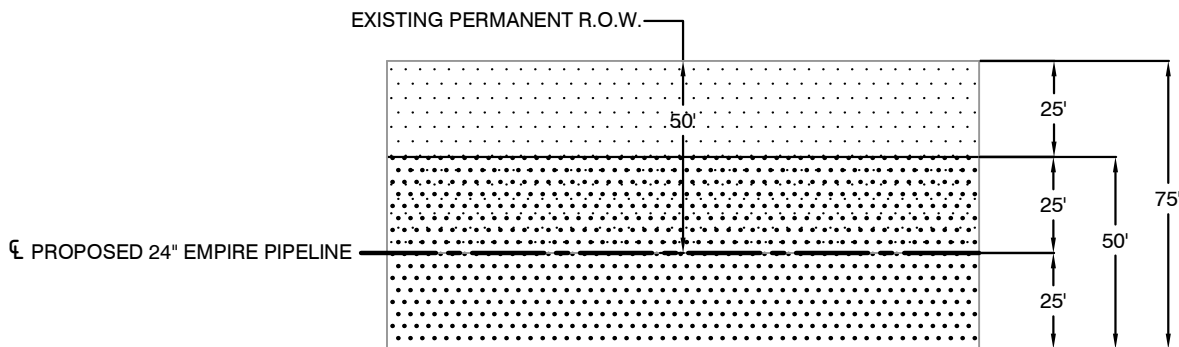
DATE: 08/24/2010

DWG. R.O.W. CONFIG 4

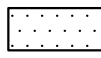
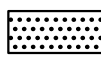
REV.



SCALE: 1"=20'



SCALE: 1"=50'

-  EXISTING PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)

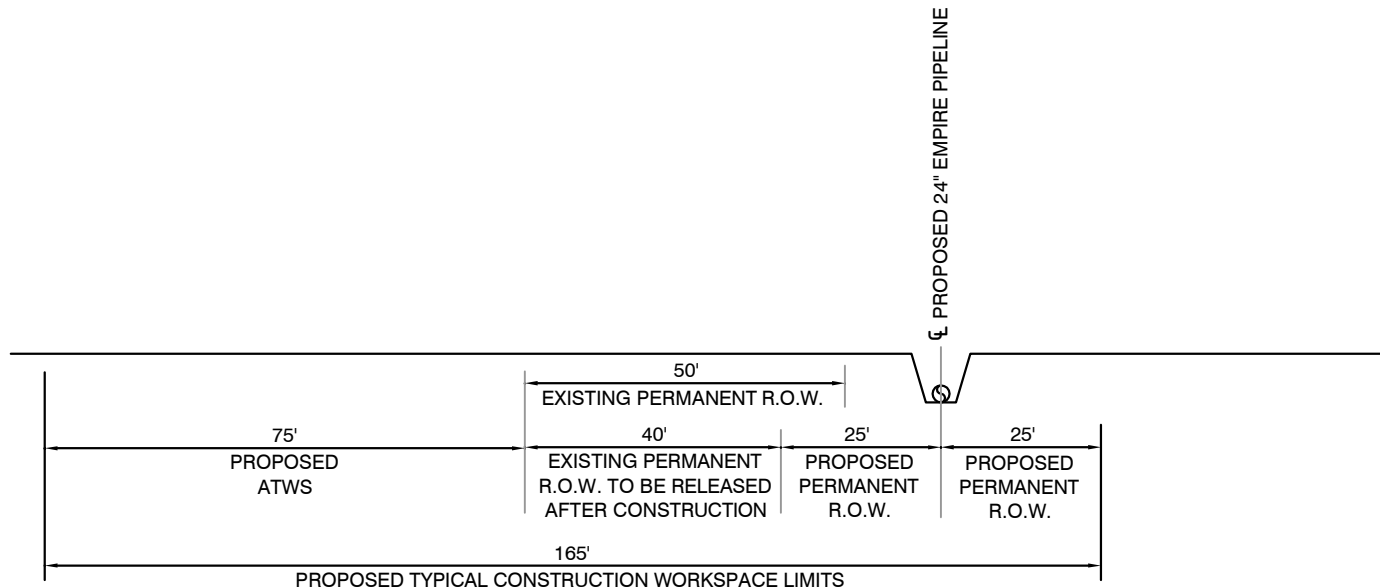


150 Lower Westfield Road
Holyoke, MA 01040

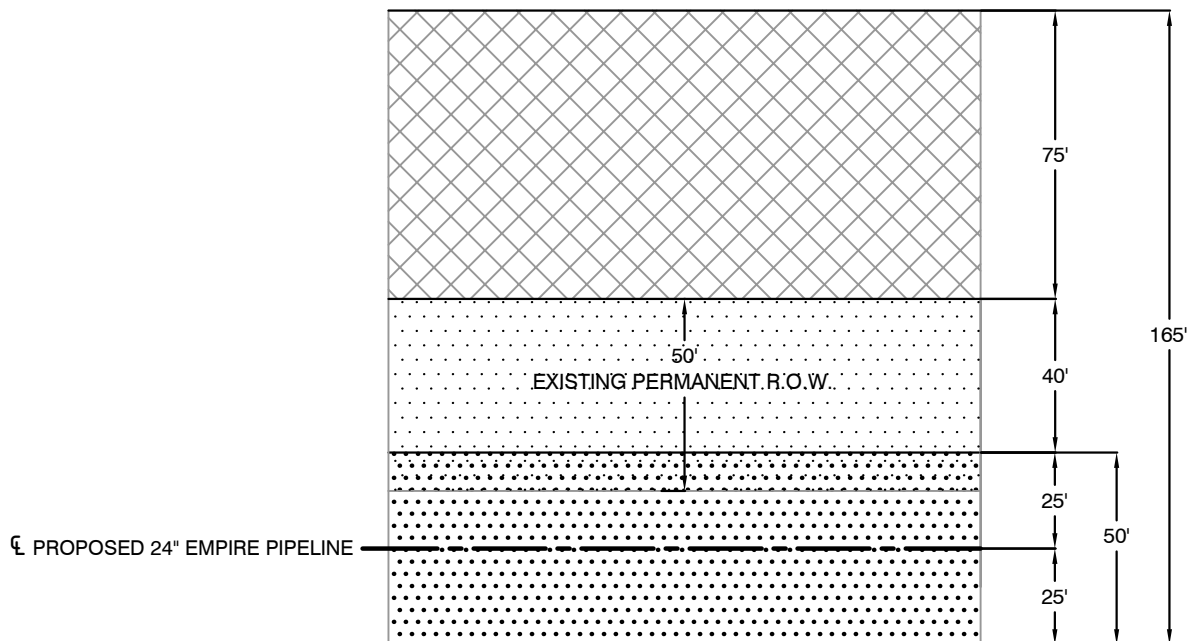
EMPIRE LIFT AND LAY SECTION RIGHT-OF-WAY
TYPICAL CONFIGURATION
PROPOSED NEW PERMANENT RIGHT-OF-WAY TO SOUTH

FIGURE #5

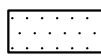
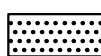
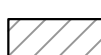
DATE: 08/24/2010	REV.
DWG. R.O.W. CONFIG 5	



SCALE: 1"=30'



SCALE: 1"=50'

-  EXISTING PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED PERMANENT RIGHT OF WAY (R.O.W.)
-  PROPOSED TEMPORARY WORKSPACE (TWS)
-  PROPOSED ADDITIONAL TEMPORARY WORKSPACE (ATWS)



150 Lower Westfield Road
Holyoke, MA 01040

EMPIRE LIFT AND LAY SECTION RIGHT-OF-WAY
TYPICAL CONFIGURATION
PROPOSED NEW PERMANENT RIGHT-OF-WAY
(WITH ATWS ON NORTH SIDE FOR TOPSOIL SEGREGATION AND STAGING)

FIGURE #6

DATE: 08/24/2010
DWG. R.O.W. CONFIG 6 REV.

Appendix D

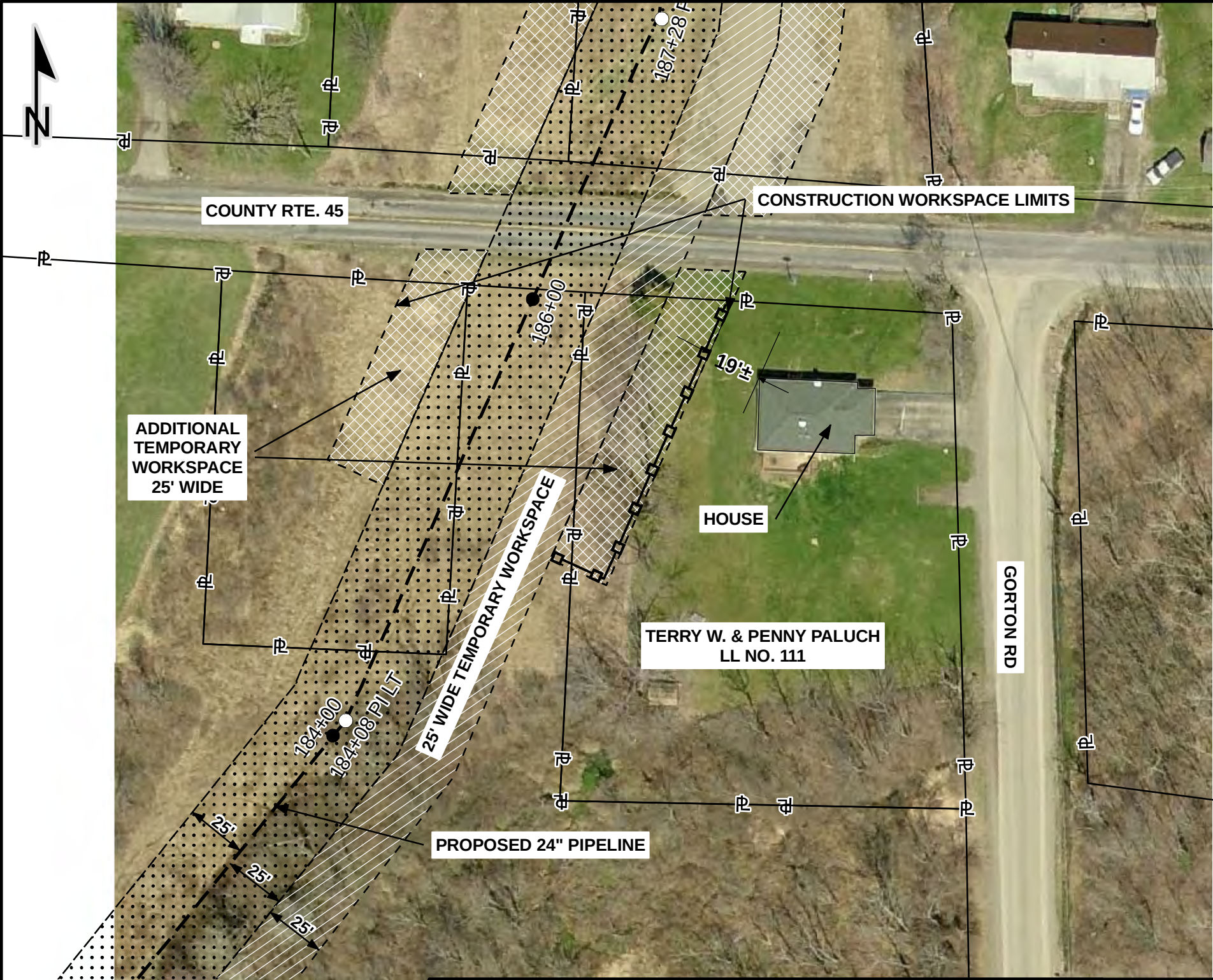
Characteristics of Soils Crossed by the Project

Characteristics of Soils Crossed by the Project										
Soil Series	Erosion Hazard	Revegetation Potential	Compaction Potential	Drainage	Shallow Rock (Y/N) ^a	Hydric (Y/N) ^a	Prime Farmland ^b (Y/N) ^a	Vulnerable Soils		
								V/E ^c (Y/N) ^a	V/W ^d (Y/N) ^a	V/B ^e (Y/N) ^a
Tioga County Extension Section										
Tioga County, Pennsylvania										
Mardin	Moderate	Moderate	Moderate	Moderately well drained	N	N	N	Y	N	N
Volusia	Slight to Moderate	Moderate	Moderate	Somewhat poorly drained	N	N	N	Y	Y	N
Steuben County, New York										
Volusia	Slight to Moderate	Moderate	Moderate	Somewhat poorly drained	N	N	N	Y	Y	N
Mardin	Moderate	Moderate	Moderate	Moderately well drained	N	N	N	Y	N	N
Fluvaquents	Slight	Moderate	Moderate	Poorly drained	N	Y	N	N	Y	N
Ochrepts	Slight	Moderate	Moderate	Well drained	N	Y	N	N	N	N
Lordstown	Moderate	Moderate	Moderate	Well Drained	Y	N	Y	N	N	Y
Lordstown-Arnot Association	Moderate	Moderate	Moderate	Well Drained	Y	N	N	N	N	Y
Howard-Madrid Complex	Slight to Moderate	Moderate	Moderate	Well Drained	N	N	Y	N	N	N
Chippewa	Slight	Moderate	Moderate	Poorly drained	N	Y	N	N	Y	N
Alden	Moderate	Moderate	Moderate	Very poorly drained	N	Y	N	N	Y	N
Carlisle	Slight	Moderate	Moderate	Very poorly drained	N	Y	N	N	N	N

Characteristics of Soils Crossed by the Project										
Soil Series	Erosion Hazard	Revegetation Potential	Compaction Potential	Drainage	Shallow Rock (Y/N) ^a	Hydric (Y/N) ^a	Prime Farmland ^b (Y/N) ^a	Vulnerable Soils		
								V/E ^c (Y/N) ^a	V/W ^d (Y/N) ^a	V/B ^e (Y/N) ^a
Middlebury	Moderate	Moderate	Moderate	Well drained	N	N	N	N	N	N
Tioga	Moderate	High	Moderate	Well drained	N	N	Y	N	N	N
Alton	Slight	High	Low	Well drained	N	N	Y	N	N	N
Cut and Fill	Moderate	N/A	Moderate	Moderately well drained	N	N	N	N	N	N
Braceville	Moderate	Moderate	Low	Well drained	N	N	Y	N	N	N
Arnot	Moderate	Moderate	Moderate	Well drained	Y	N	N	N	N	N
Lift and Lay Section, Victor, Ontario County, New York										
Arkport	Moderate	High	Low	Well drained	N	N	Y	N	N	N
Ontario	Slight	High	Moderate	Well drained	N	N	Y	N	N	N
Palmyra-Howard	Slight to Moderate	Moderately High	Moderate	Well drained	N	N	N	N	N	N
Palmyra	Slight	High	Moderate	Well drained	N	N	Y	N	N	N
Homer	Slight	Moderately High	Moderate	Somewhat poorly drained	N	N	N	N	Y	N
TGP Interconnect Meter Station, Hopewell, Ontario County, New York										
Odessa	Severe	Moderate to Low	Moderate	Somewhat poorly drained	N	N	N	N	Y	N
Schoharie	Severe	Moderate	Moderate	Moderately well drained	N	N	Y	N	N	N
a/ Y/N = Yes or No b/ Construction activities on any prime farmlands currently used for agriculture would follow the mitigation techniques described in section A.5.3. c/ V/E - designates the general area of vulnerability of erosion due to right-of-way factor(s) of slope and/or the texture of exposed soil. d/ V/W - designates the general area of vulnerability to soil horizon wetness. e/ V/B - designates the general area of vulnerability due to shallow depth to bedrock.										

Appendix E

Residential Mitigation Plans



DESCRIPTION:

THIS DRAWING DOCUMENTS A RESIDENTIAL BUILDING NEAR THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTORS SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS:

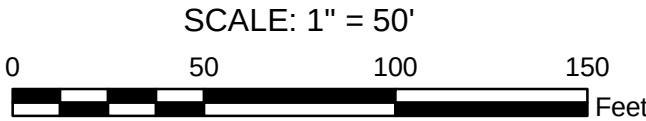
1. ALL PROPOSED CONSTRUCTION WORK AREAS WITHIN THE ROAD RIGHT-OF-WAY, ARE CONFINED TO THE LIMITS SHOWN ON THIS DRAWING.
2. CONTRACTOR SHALL ERECT AND MAINTAIN A TEMPORARY CONSTRUCTION BARRIER FENCE AT THE CONSTRUCTION WORKSPACE LIMIT ADJACENT TO THE RESIDENTIAL STRUCTURE (THOSE WITHIN 25' OF CONSTRUCTION CORRIDOR) DURING THE CONSTRUCTION PERIOD.
3. CONTRACTOR SHALL INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES (SILT FENCE AND/OR HAY BALES) AS REQUIRED TO ENSURE THAT CONSTRUCTION SPOIL IS CONTAINED WITHIN THE APPROVED CONSTRUCTION WORK AREA AND DOES NOT ENTER OTHER PORTIONS OF LANDOWNER'S PROPERTY.
6. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
7. DISTURBED ITEMS SUCH AS DRIVEWAYS, LAWNS AND LANDSCAPED AREAS SHALL BE RESTORED AS SOON AS PRACTICAL AFTER CONSTRUCTION BY THE DESIGNATED CONTRACTOR.
8. CONTRACTOR SHALL ALLOW ROADWAY TRAFFIC FLOW TO CONTINUE DURING CONSTRUCTION IN THIS AREA, UNLESS TRAFFIC DETOURING MEASURES HAVE BEEN APPROVED IN ADVANCE BY APPLICABLE JURISDICTIONAL AGENCIES.
9. CONTRACTOR SHALL MINIMIZE NOISE FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES, AND SHALL COMPLY WITH ALL LOCAL NOISE ORDINANCES.
10. CONTRACTOR SHALL TAKE APPROPRIATE MEANS TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES. CONTRACTOR SHALL PROVIDE STREET SWEEPING SERVICES IF NECESSARY DURING ROADWAY CONSTRUCTION ACTIVITIES NEAR RESIDENCE.

KEY NOTE:

EMPIRE PIPELINE OR AN AGENT THEREOF WILL NOTIFY LANDOWNER/OCCUPANT OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.

LEGEND:

- PROPOSED PERMANENT RIGHT-OF-WAY
- AREA OF TEMPORARY WORKING SPACE
- AREA OF ADDITIONAL TEMPORARY WORKING SPACE
- SURVEY LINE OF PROPOSED PIPELINE
- PROPOSED CONSTRUCTION BARRIER FENCE AND SEDIMENT CONTROL STRUCTURES
- PROPERTY LINE



FISHER ASSOCIATES

Project: 092023-233

Revision Date: August 6, 2010

Revision Time: 10:47:50 AM

Author: Maggie Norman

QAQC: Steve Boddecker, Kevin Jenkins

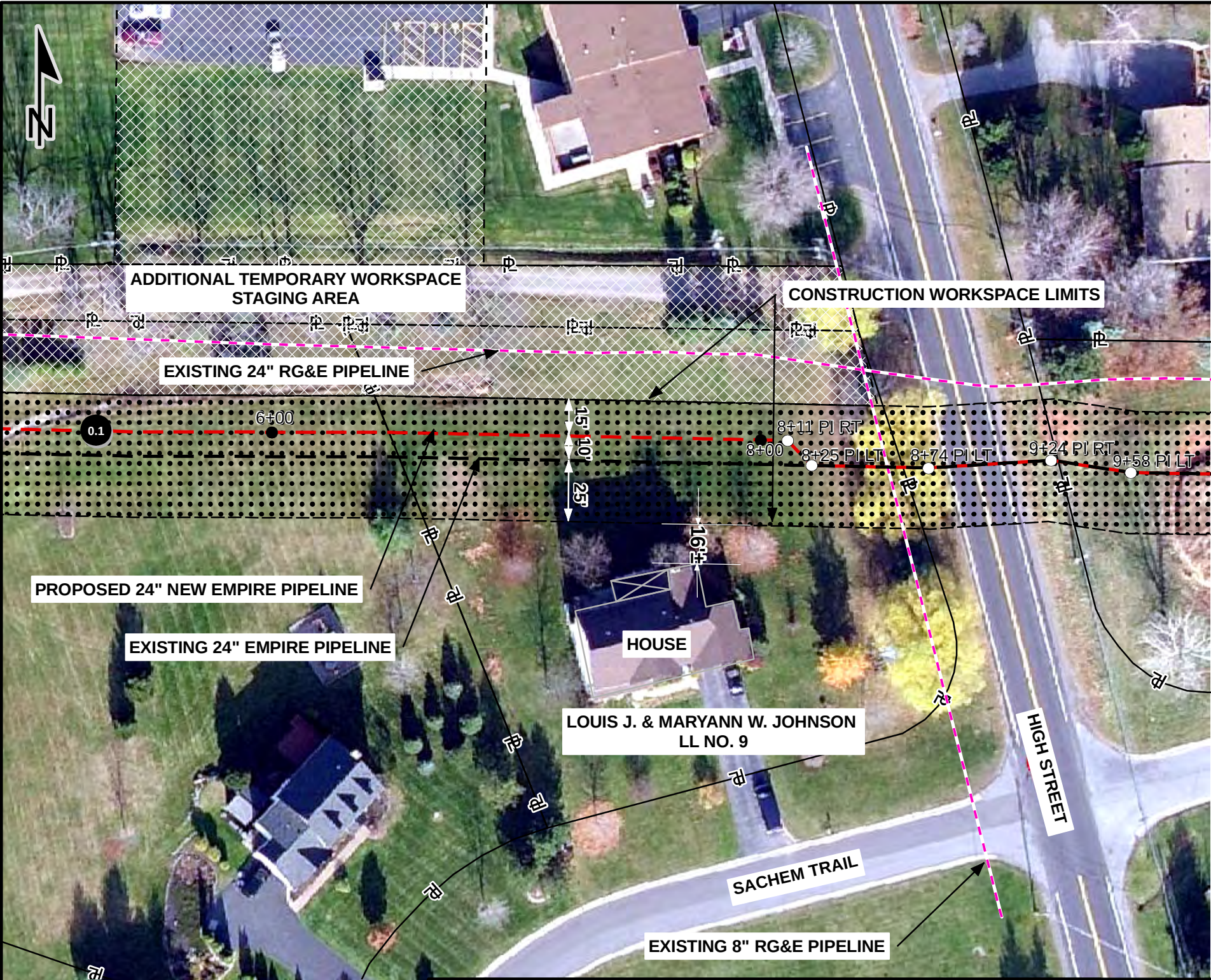
LOCATION: V:\Projects\092023\233-002\LL111_ResidentialMap.mxd

**TIOGA COUNTY EXTENSION PROPOSED 24" PIPELINE
RESIDENCE NEAR CONSTRUCTION WORK AREA**

**TERRY W. & PENNY PALUCH
LL NO. 111**

TAX ID 301.00-01-016.000

DRAWING NO.	TITLE	NO.	DATE	BY	DESCRIPTION	PROJ. ID	APPR.
REFERENCE DRAWINGS		REVISIONS					



DESCRIPTION:

THIS DRAWING DOCUMENTS A RESIDENTIAL BUILDING NEAR THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTORS SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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2. CONTRACTOR SHALL ERECT AND MAINTAIN A TEMPORARY CONSTRUCTION BARRIER FENCE AT THE CONSTRUCTION WORKSPACE LIMIT ADJACENT TO THE RESIDENTIAL STRUCTURE (THOSE WITHIN 25' OF CONSTRUCTION CORRIDOR) DURING THE CONSTRUCTION PERIOD.
3. CONTRACTOR SHALL INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES (SILT FENCE AND/OR HAY BALES) AS REQUIRED TO ENSURE THAT CONSTRUCTION SPOIL IS CONTAINED WITHIN THE APPROVED CONSTRUCTION WORK AREA AND DOES NOT ENTER OTHER PORTIONS OF LANDOWNER'S PROPERTY.
6. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
7. DISTURBED ITEMS SUCH AS DRIVEWAYS, LAWNS AND LANDSCAPED AREAS SHALL BE RESTORED AS SOON AS PRACTICAL AFTER CONSTRUCTION BY THE DESIGNATED CONTRACTOR.
8. CONTRACTOR SHALL ALLOW ROADWAY TRAFFIC FLOW TO CONTINUE DURING CONSTRUCTION IN THIS AREA, UNLESS TRAFFIC DETOURING MEASURES HAVE BEEN APPROVED IN ADVANCE BY APPLICABLE JURISDICTIONAL AGENCIES.
9. CONTRACTOR SHALL MINIMIZE NOISE FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES, AND SHALL COMPLY WITH ALL LOCAL NOISE ORDINANCES.
10. CONTRACTOR SHALL TAKE APPROPRIATE MEANS TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES. CONTRACTOR SHALL PROVIDE STREET SWEEPING SERVICES IF NECESSARY DURING ROADWAY CONSTRUCTION ACTIVITIES NEAR RESIDENCE.

KEY NOTE:

EMPIRE PIPELINE OR AN AGENT THEREOF WILL NOTIFY LANDOWNER/OCCUPANT OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.

LEGEND:

- EXISTING PERMANENT RIGHT-OF-WAY
- AREA OF TEMPORARY WORKING SPACE
- AREA OF ADDITIONAL TEMPORARY WORKING SPACE
- SURVEY LINE OF PROPOSED PIPELINE
- SURVEY LINE OF EXISTING PIPELINE
- PROPERTY LINE

SCALE: 1" = 50'

0 50 100 150 Feet



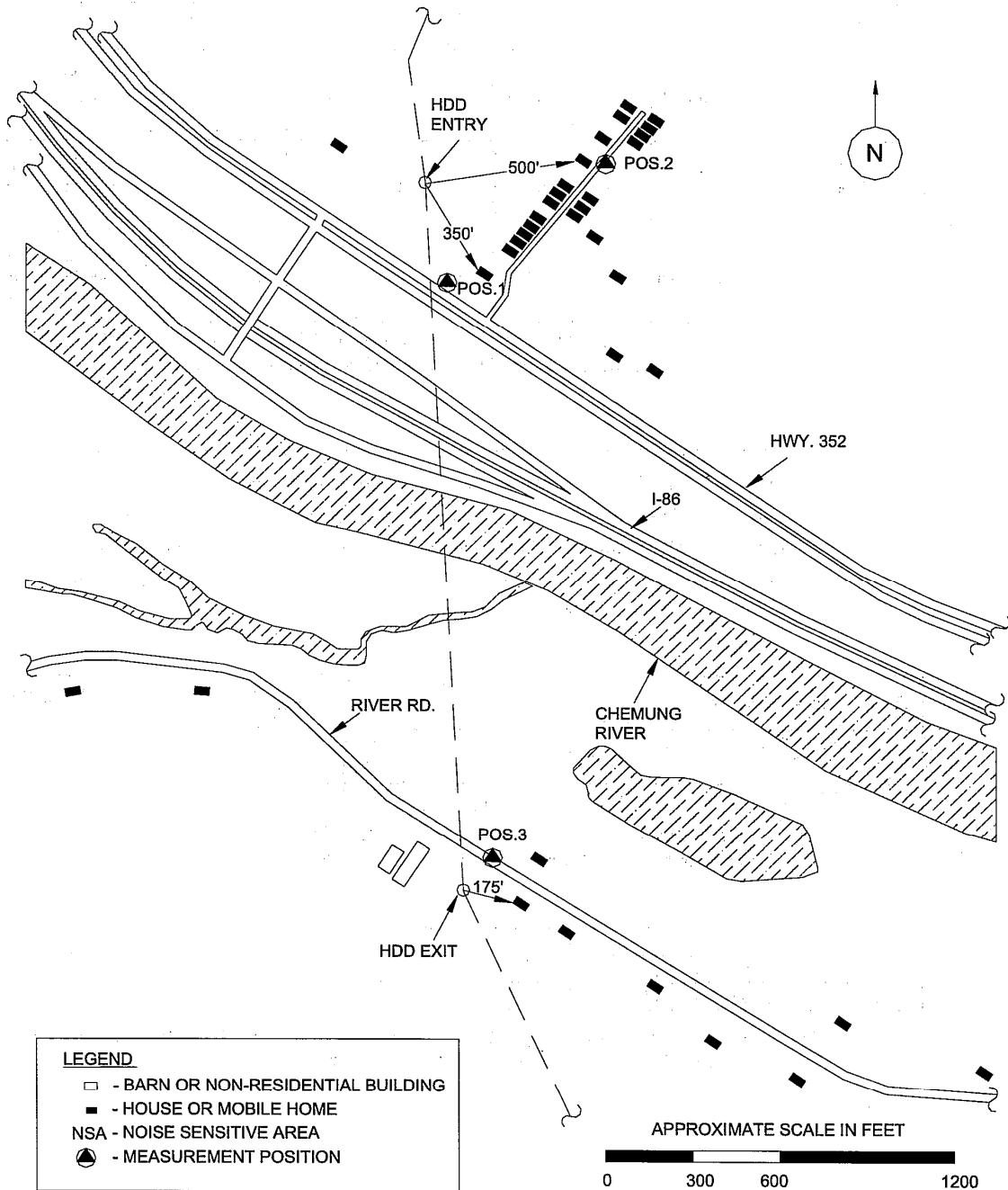
**TIOGA COUNTY EXTENSION
LIFT AND LAY PROJECT, VICTOR, NEW YORK
RESIDENCE NEAR CONSTRUCTION WORK AREA**

**LOUIS J. & MARYANN W. JOHNSON
LL NO. 9
TAX ID 6.02-2-39.01**

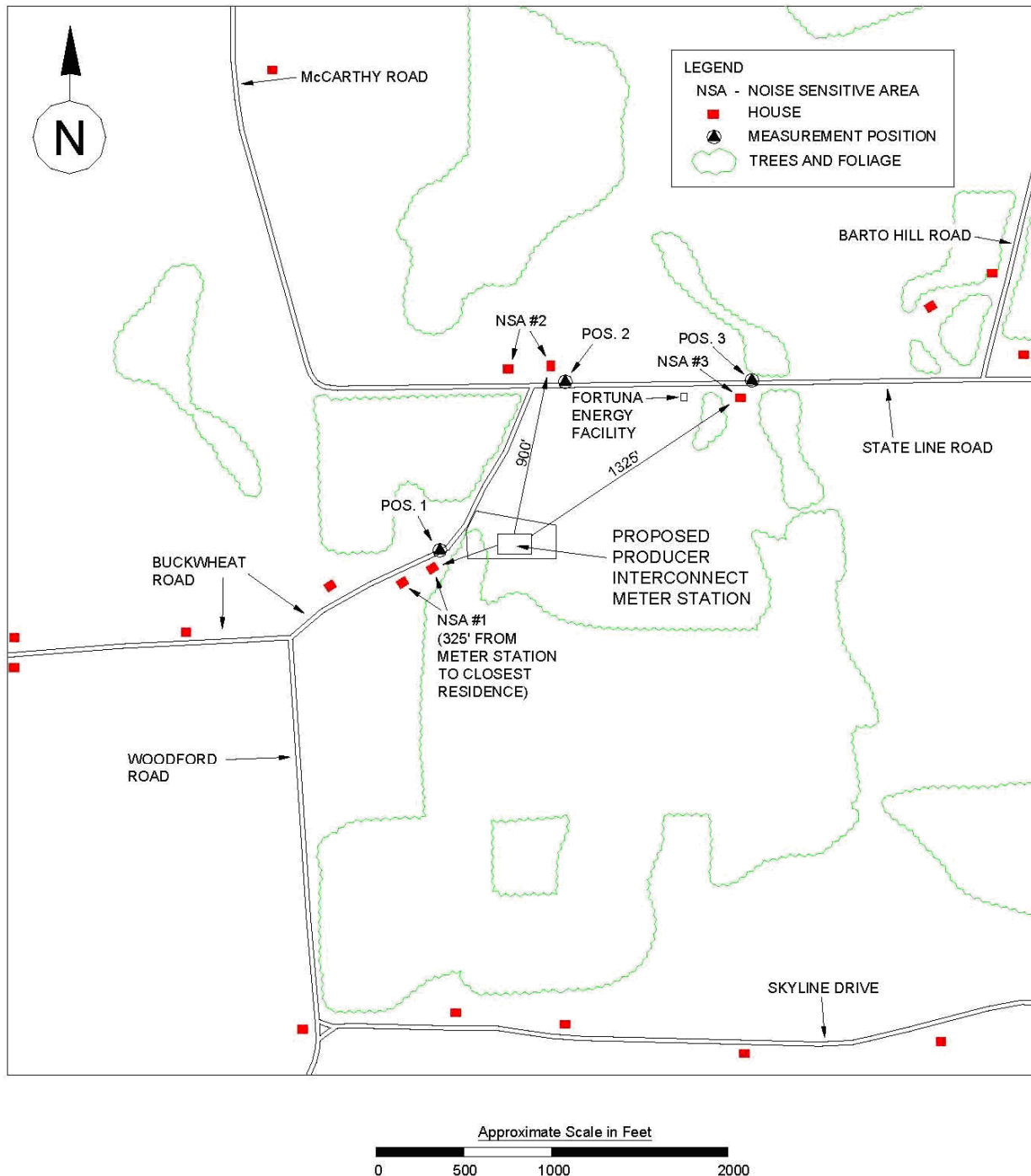
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REFERENCE DRAWINGS		REVISIONS							

Appendix F

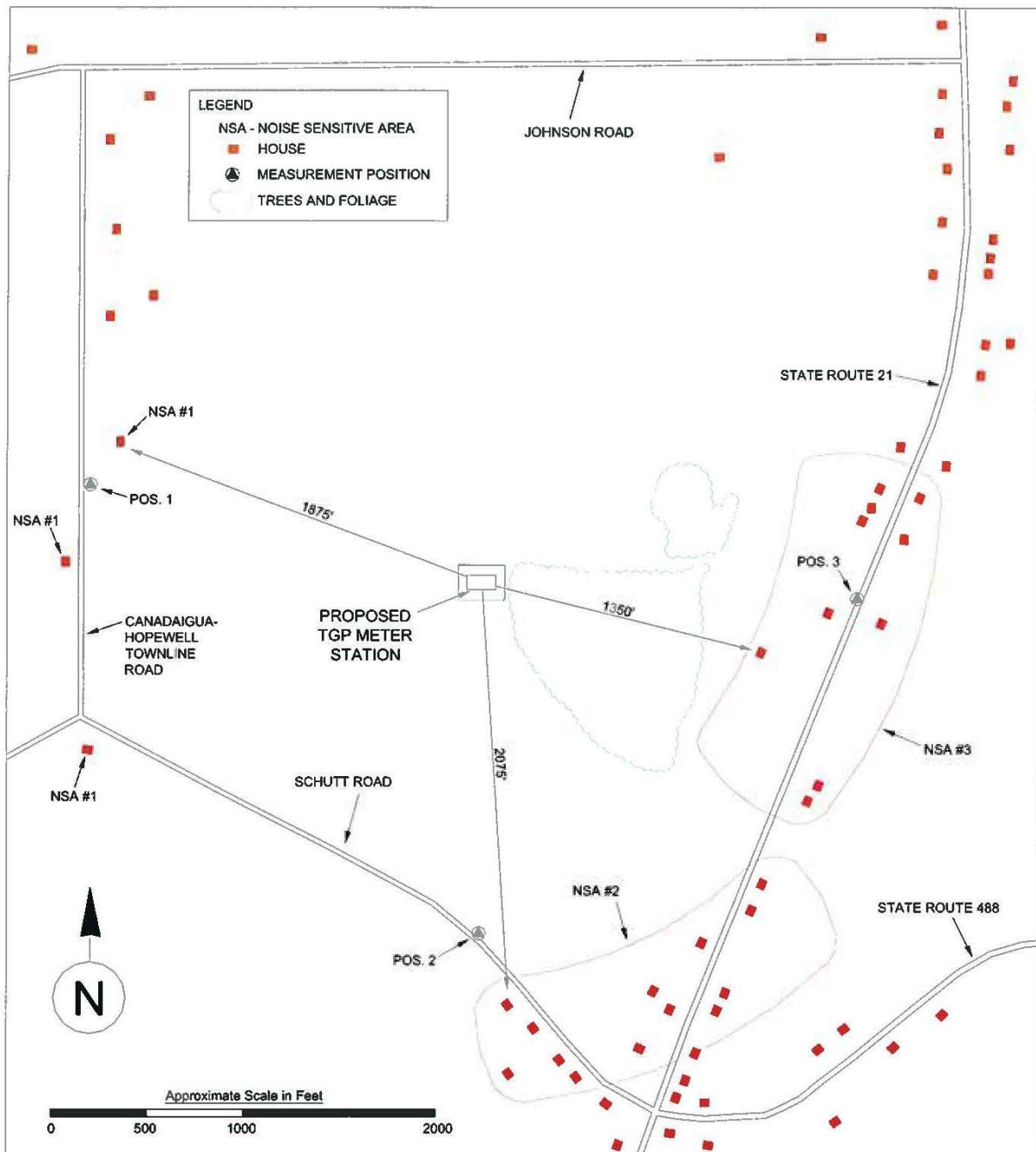
Noise-Sensitive Area Maps



HDD #1: Chemung River, I-86 & Hwg. 352: Area Layout Showing the Location of Planned HDD Crossing, HDD Entry/Exit Locations & Nearby NSAs



Proposed Producer Interconnect Meter Station and Surrounding Area



Proposed TGP Meter Station and Surrounding Area

Appendix G

List of Preparers

Crosley, Shannon – Project Manager, *Geology, Soils, Land Use, and Alternatives*
B.S., Natural Resources Management, 1998, University of Maryland

St. Onge, Ellen – *Cultural Resources*
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B.S., Marine Biology, 2005, University of North Carolina, Wilmington

Harris, Jessica – *Air Quality and Noise, Reliability and Safety*
B.S., Mechanical Engineering, 2006, Clark Atlanta University